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ORIGINAL ARTICLES

FULGURATION TREATMENT OF BLADDER TUMORS *

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Tumors of the urinary bladder present a rather discouraging outlook as regards prognosis and treatment, when one has in mind a complete and permanent cure.

It is a well known fact that the tendency for papillomata is to recur after operation in a large number of cases operated on, this recurrence having been variously estimated up to 50 per cent. Not only do they recur at their former sites, but new tumors are often formed in parts of the bladder remote from the site of a former operation, and they have often been known to recur in the operation scar.

At the first German Urological Congress, Lichtenstern reported two cases in which the recurrences were found in the recti muscles, these recurrences being malignant in nature, after the original tumors had been diagnosed histologically as benign papillomata. In one of these nodules excised from the muscle he found alveolar carcinoma with bone formation.

On the other hand, patients may suffer for many years with papillomata of the bladder without any signs of malignant degeneration. For example, Casper records one case of benign papilloma of twenty-six years' duration, whereas Stein reported a patient who had had a benign papilloma for forty-two years.

If we add to the probabilities of recurrence, the possibilities of malignant degeneration of both the original tumor and its recurrences, the dangers of anesthesia and postoperative complications, and if we consider

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the poor surgical risks in those who have had profuse hemorrhages extending over a long time before being operated on, the outlook for the ultimate cure in papillomata of the bladder is indeed bad.

Any method of treatment, therefore, which is easy of application, which is sure in its results, and which can promise a smaller percentage of recurrences after operation and which, in addition, requires no anesthetic, is a mode of treatment which bids fair to displace the present ways of dealing with these tumors.

It is with this object in view that I wish to call your attention to a comparatively new method of treating papillomata of the urinary bladder. This method of treatment has been used for about two years, having been first reported by Beer, and closely followed by the preliminary report of Keyes, Jr. It has been called the fulguration treatment by various authors, although Beer objects to this term. Thomas, of Philadelphia, calls it a method of desiccation. It is my object to call your attention to this form of treatment and to outline briefly the technic of using it, and to report five cases treated in this way.

1. *Source of the Current.*—The high frequency current necessary for carrying out this method of treatment is obtained from the apparatus made by Wappler of New York. In the early work a smaller apparatus was used, but without success, and therefore, the cases treated by means of this inefficient apparatus will not be included in this series of cases.

2. *Type of High Frequency Current Used.*—At first the unipolar or Oudin current was utilized. This has rendered good service, but there were two cases in which it appeared that the current was not strong enough to effect a complete cure, i. e., to cause all of the tumor to disappear. It was then decided to use the bipolar or D'Arsonval current. This has given the best results and is now used as a matter of routine. One pole is placed in the bladder and will be described below. The other pole is placed in one of two places, depending on the location of the tumor. If the tumor is situated in the apex of the bladder a large flat metallic plate is placed on the abdomen in the region of the suprapubic area. In those cases where the tumor is found on the base of the bladder an electrode is placed in the rectum or vagina.

The electrode placed in the bladder consists of a steel wire well insulated. It is of a Number 6, French, so that it can be easily passed through the channel of an ordinary catheterizing cystoscope. Copper electrodes may be used with equal success, as has been done by Beer of New York.

We have at various times used the Nitze, Brenner, Brown-Buerger and the Wappler oblique vision cystoscopes, depending on the size and location of the tumors.

TECHNIC

The preliminary steps of the technic are those usually employed for cystoscopy and ureteral catheterization. The patients are prepared with green soap and water and bichlorid and the bladder distended with water. After having introduced the cystoscope the tumor is brought into view

and the fulguration wire is passed through the catheter channel of the cystoscope until the end of the wire is in view. The wire is then plunged into the tumor and the current turned on. The spark gap is about 1/6 to 1/3 of an inch wide. Just as soon as the high-frequency current is turned on, bubbles are seen emanating from the tumor. If the tumor is small, or the electrode has been placed near the top of the tumor an immediate blanching of the tumor is seen. This treatment can readily be carried out under the guidance of the eye, provided the insulation of the fulguration wire is intact; unless the insulation is intact a short circuit in the cystoscope and subsequent burning out of the cystoscopic lamp might result.

After having allowed the current to pass into the tumor for about twelve to fifteen seconds, the current is shut off, the fulguration wire withdrawn and reapplied to another part of the tumor. In large tumors this procedure can be repeated until many different areas of the tumor have been treated in one sitting. As long as five or six minutes may be consumed in one sitting. Naturally, the duration of each treatment will depend on the size of the tumor. For example, in one case, one sitting consisting of three 12-second applications was enough to completely destroy a small papilloma (Case 3).

The duration of the burnings or fulgurations depend on three factors: 1. The patient. 2. The operator. 3. The instruments.

I.—THE PATIENT

Under this heading we may take up the following:

(a) Pain.

(b) Hemorrhage.

(c) Danger of burning bladder-wall.

(d) Size of tumor.

(a) Pain.—As long as the intravesical electrode remains in contact with the tumor, no pain is experienced by the patient. When working near the base of the tumor, or if the electrode comes in contact with the bladder-wall, the patient frequently complains of pain. So that during the first fulgurations there is no pain, whereas toward the end of the treatment, while working near the bladder in treating the remaining tags, the patient at times complains of pain. It is also necessary to consider the pain incident to cystoscopy. This is variable in different persons, so that some of the patients cannot tolerate long sessions as well as others.

(b) Hemorrhage.—The rule in treating papillomata has been that the fulguration immediately stopped the hemorrhage. In treating an epithelioma a great deal of hemorrhage was produced, so that it became necessary to stop fulgurating in order to distend again with clear media. We have never had this experience in papilloma cases.

(c) Danger of burning bladder-wall.—This should always be borne in mind when treating small tumors or when treating the fragments remaining after fulgurating larger growths.

(d) Size of tumor.—As previously stated the size of tumor determines the number of treatments, one case requiring as many as six sittings. The tumor was of a rather large size and cystoscopy produced more or less irritation so that each treatment was limited to three or four areas.

II.—THE OPERATOR

From the operator's end the duration of the burns may be either long or short, depending entirely on personal perseverance and patience.

III.—THE INSTRUMENTS

(a) Short circuiting of cystoscope so that the light is extinguished. This can be avoided by careful attention to the rheostat, cords, etc., prior to beginning the fulguration, and by careful use of only such wire for fulguration as is well insulated. Some of the wire we have had has become brittle and cracked, thereby giving rise to short circuits.

(b) Burning off of end of fulguration wire. After the current has been turned on and the treatment been carried out for a little while, sometimes only ten seconds, the insulation becomes soft and falls off or burns off from the end of the wire, so that it becomes necessary to withdraw the wire and cut the end off squarely. Unless this is done there is danger of the bare wire causing a short circuit in the cystoscope.

LIMITATIONS

1. Very large papillomata. In order to carry out fulguration treatment successfully, the usual conditions necessary for cystoscopy must be fulfilled. It is therefore needless to say that if cystoscopy cannot be carried out that we cannot employ fulguration. This recently occurred in one case referred by Dr. Wilbur Post from Dr. Billings' service. The entire bladder was completely filled with four large papillomata so that cystoscopy was impossible.

EFFECTS

Usually when the high-frequency current is applied the tissues become white and shrivel up. Sometimes the tumor surface appears dark, as though it were baked. Not infrequently after an application a larger or smaller piece of the tumor adheres to the end of the fulguration wire. At other times these small pieces may be passed at the next urination, and often they are obtained from the wash-water. These are carefully saved and examined microscopically.

In regard to the results obtained in the treatment of carcinomata, my results correspond quite closely to those of other writers.

I wish to take this opportunity of reporting the following cases treated by this method.

CASE 1.—Mr. C., aged 64 years. Up to the onset of his present trouble he had always been perfectly well. In October, 1911, he had his first attack of hematuria. This was without pain or any disturbance of micturition. He immediately went to bed for a few days and the hematuria ceased. Two weeks after this he had a second attack of hematuria which persisted for six weeks, so that the total period of hemorrhage from the bladder was eight weeks. Toward

the end of this period he passed large clots daily. The hematuria was variable; sometimes the first urine would be clear, then he would pass a clot and the remainder of the urine would be bloody. At other times the entire urine was well mixed with blood.

Two days ago there was a period of twenty hours during which he passed clear urine so he thought he was perfectly well.

For the past three or four years he has been obliged to get up once at night. During this time he has pain along the posterior aspect of the thighs. This was not very severe and he did not attach much significance to it. He has never had perineal pain or scrotal pain.

Physical examination negative with the exception of a slight edema around the malleoli. Rectal examination negative. Blood-examination: hemoglobin 60 per cent. Urinary examination negative except for the presence of large amounts of red blood-corpuscles; no casts found. Cystoscopically a small papilloma was found in the right side of the bladder. The surface of the tumor was ulcerated and bleeding profusely.

First fulguration treatment on Jan. 6, 1912. This was not accompanied by any pain and there was almost immediate cessation of the hemorrhage. A small piece of tumor tissue came away on the end of the fulguration wire. This was examined histologically and was diagnosed benign papilloma, no signs of malignancy being found. Second fulguration treatment on January 16. There had been no bleeding since the last treatment but a slight frequency of urination lasting about twenty-four hours had followed it. The top of the tumor shows an area which appears as if part of the tumor has sloughed away. Third fulguration treatment January 26. Fourth fulguration treatment February 12. Fifth fulguration treatment April 2. The last cystoscopic examination was made on May 11. All of the tumor has disappeared and as a result of the last fulguration ulceration of the bladder is present. For the last treatment the bipolar current was used, whereas the previous treatments were made with the unipolar current. The patient feels perfectly well. A subsequent cystoscopic made since this paper was read, showed a complete disappearance of the tumor and the scar completely healed.

CASE 2.—Dr. J., aged 36 years; patient of Dr. L. E. Schmidt. The patient first came under observation in 1907. He complained of terminal hematuria of three years' duration, which for three months had occurred daily. The urine was clear, but just at the end of urination a few drops (2 to 10) of bright red blood followed. Twice in the last six months the whole urine had been red for several days. No pain, except just at the end of urination when there was a stinging sensation back of the symphysis. There was no frequency at night, but during the day he urinated at least every two hours.

He was cystoscoped by Dr. L. E. Schmidt, who diagnosed papilloma. The tumor was situated just behind the left ureteral orifice. Dr. Schmidt did a suprapubic cystotomy and removed the tumor. Uneventful recovery.

After leaving the hospital the patient remained well for four years until Dec. 20, 1911. Following an unusually severe confinement case the doctor felt a "giving away" in his bladder. He immediately voided urine which was very bloody. He at once came to the Alexian Brothers Hospital and was examined cystoscopically with the following result: The bladder shows no stone, no cystitis. The site of the previous operation is perfectly normal and there is no sign of a recurrence of the previous tumor. In the apex of the bladder is a small papilloma about the size of the end of a finger which is bleeding profusely. The patient was fulgurated the first time for about thirty-six or forty seconds. The bleeding immediately stopped and on washing out his bladder at the end of the treatment a large piece of the tumor came away. This was sectioned and diagnosed benign papilloma. The patient had no disturbance following this treatment and came back in ten days for a second treatment. Three days after the second fulguration he had another severe hemorrhage. The third fulguration treatment was given and the patient appeared not to be making the usual progress which these cases

do. It was therefore decided that the treatment be changed from the unipolar to the bipolar current. The fourth treatment was given with the bipolar current and the tumor was fulgurated in four or five different areas for twelve seconds in each area. Since then there has been no more bleeding and a recent cystoscopy shows simply an ulcer at the site of the tumor. The ulcer is surrounded by considerable edema which might suggest malignancy but it is purely due to the reaction of the treatment. This has been described by Keys, Jr., and usually disappears in due course of time.

CASE 3.—Mr. G., aged 29 years. The first hematuria occurred in October, 1911. The hematuria appeared in one urination only, was free from pain and came on without apparent cause. The second hematuria occurred three months after the first, and was present in only one urination. The third hematuria was not so severe as the two previous attacks, occurring while the patient was in the bath and consisting principally of clots which were rather small.

The general physical examination was negative. Cystoscopically a slight edema of the internal urethral orifice was found, no cystitis and no stone. Both ureteral orifices were negative. In the region of the left ureteral orifice was seen a small papilloma, well pedunculated, about the size of a lead pencil and about an inch long. A high-frequency treatment, twenty-five seconds in duration, was given. This was the only treatment the patient received. Cystoscopic examination on May 2 shows that the tumor has completely disappeared. The site of the tumor is surrounded by an area of hyperemia.

CASE 4.—Mrs. S., aged 79 years, referred by Dr. Ware. For the past seven or eight weeks the patient has been suffering with painless hematuria. There have been no symptoms, no frequency of urination, no pain on urination and no calculi have been passed. Seven years ago the patient had a similar attack of painless hematuria which was of shorter duration. She was treated with bladder irrigations of weak adrenalin solution. She had been free from hemorrhage during the past seven years.

The patient's general condition is bad. She has lost some weight. The mucous membranes are all very pale, due to the loss of blood. Urinary examination shows many red blood-corpuscles. No casts were found. Cystoscopically the bladder mucous membrane is very anemic. In the region of the left ureteral orifice a papilloma the size of a small walnut is seen and in the bas-fond a small blood-clot was found. The first fulguration treatment was made in three different parts of the tumor for twelve seconds in each place. There was an immediate cessation of the bleeding and it has not recurred since. The patient says she is perfectly well now, that there is nothing wrong with her and it has been impossible for Dr. Ware to convince her of the importance of coming back for cystoscopic examination and further fulguration treatment. This case of course cannot be put down as a cure but the best we can say is that the procedure was efficient in stopping her hemorrhage immediately. This was the only line of treatment which could be carried out in her case on account of her age and the exceedingly bad physical condition due to the persistent hemorrhage.

CASE 5.—(As previously stated in an earlier part of this paper, it was impossible to fulgurate this patient successfully on account of the enormous size of the papillary tumors which completely filled his bladder.)

RESULTS

The value of any new therapeutic measure is based on the results. These can best be considered under two heads:

1. Immediate.
2. Remote.

The immediate results were absolutely satisfactory in treating the cases of papilloma. That is, the fulguration caused a cessation of the hemorrhages and after a variable number of treatments the tumors

completely disappeared. These results correspond with the results of others who have used this form of treatment.

The remote results can best be determined only as time goes on. The longest published case that I have been able to find is one reported well nineteen months after cessation of the treatment. This case is reported by Keyes, Jr., who also reports two cases well one year after operation.

If we bear in mind the simplicity of the treatment which can be carried out in an ambulatory way and the ease of treating small recurrences should they arise, this mode of treatment at least deserves consideration in the treatment of benign papillomata of the bladder.

29 East Madison Street.

DISCUSSION

Dr. L. W. Bremerman, Chicago: It gives me great pleasure to be called upon to discuss this exceedingly important paper of Dr. Kretschmer and to add my experience as an evidence in the successful treatment of this condition of papilloma of the bladder by the use of the high frequency spark or current. I have had under my observation during a period of 19 months 13 cases of papilloma of the bladder. The first case, which I reported in a paper read before the Urological Society in September, 1911, was one following the reading of a paper by Dr. Keyes, in which my attention was called to this form of treatment. Four or five seances were given in the destruction of these small papillomatous growths. I have had this patient under observation ever since, at frequent intervals, and have made cystoscopic examinations of the bladder and there has been no recurrence in this case treated for the longest period of time, 19 months. Others have varied from 19 months to a few weeks. There have been no recurrences in any of the cases whatever, with the exception of one, a report of which I will read to you in a moment.

The paper gave the idea that this form of treatment required dexterity and a great deal of preparation as to technic. I do not think the author meant to convey that impression. Any one who is capable of making a cystoscopic examination is capable of treating a papillomatous growth in the bladder by the use of the high frequency spark. We see how frequent recurrences have been from the open operation by the suprapubic route for tumors of the bladder, the great mortality percentage occurring from recurrent conditions usually developing into the malignant type.

In my article which I read before the American Urological Society in September, I reported seven cases in which I performed the open operation, and five of the patients died within a period of fourteen months from recurrent carcinomatous degeneration. Whether or not the trauma produced by the open operation was the cause of the condition recurring as a malignant growth, I cannot tell. But now we have a method by the use of the high frequency spark which allows the patient to continue to attend to his daily duties, going to the office or the hospital for a few minutes sitting, where the treatment is given painlessly, and after a few seances or sittings the bladder is cleared of the papillomatous growth.

There is one case which I wish to report as a recurrence of the condition from the use of the high frequency treatment, and I report it to prove that there is such a thing as recurrence following this form of treatment.

Male, aged 34 years; single. Referred to me by Dr. Harsha. This is an exceedingly interesting case. Family history negative. Previous history: had gonorrhea once or twice fourteen years ago, nothing else. For about four months prior to two years ago the patient began to have urinary disturbances, frequency of urination with pain. He consulted a physician, who treated him by lavage and internal medication, with no improvement. In fact, blood was soon noticed in his urine. Dr. Harsha was consulted, and two years ago, in October, the patient was operated upon. The growth was removed through a suprapubic cys-

totomy. Patient left the hospital in a few weeks. He was apparently well for several months. One year ago I saw the patient with Dr. Harsha. Cystoscopy showed the largest growth I have ever seen in the bladder. Dr. Harsha performed another suprapubic operation and scraped out a handful of soft material.

I might say that the laboratory report in both instances showed papilloma. The patient left the hospital apparently cured. Five months ago he consulted me. Cystoscopy showed an extensive recurrence covering a large area of the bladder, and looked typically papillomatous. Fulguration was instituted. He has been given a treatment every five days since, with a marked disappearance of the growth, although he still has a fair supply as some of the gentlemen here present can vouch for, as I showed this case at my clinic on Monday evening. I feel that I will clear up the condition with this line of treatment.

My conclusion, based upon these cases, is as follows: That papillomata should be considered malignant in all cases; that in all cases of long standing cystitis, which has persisted even in the presence of careful treatment, or with the history of frequent relapses, papilloma should be suspected, and the diagnosis confirmed or contradicted by cystoscopy; that the open operation is followed rapidly in the majority of cases by an early recurrence; that the fulguration method is followed by remarkable results, but as yet sufficient time has not elapsed for us to make a definite statement as to an absolute guarantee that this treatment will prevent recurrences.

THE NEEDS OF THE EYE, EAR, NOSE AND THROAT SURGEON IN GENERAL HOSPITALS *

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All eye, ear, nose and throat specialists are well aware of the difficulties to be encountered in endeavoring to do their work in general hospitals.[1]

We visit such institutions as the New York Eye and Ear Infirmary, the Massachusetts Eye and Ear Infirmary, etc., and we envy those surgeons who seem so easily to dispose of their work. In these institutions we find permanent operating-room nurses and interns, who serve long terms and who become familiar with their duties. We find good instruments, solutions, lights, wards, etc., all arranged for the convenience of the surgeons and for the benefit of the patients. The surgeon is thus enabled to give his entire time and attention to his work, his operations and service, which, of course, results in a quiet, undistracted mind, better scientific thought and a higher percentage of good results. The work proceeds easily and comfortably, accompanied with only a minimum amount of confusion and irritation, and with all equipments and apparatus for ordinary and extraordinary occasions. To work in such institutions is a privilege and a pleasure, and it is an incontestable fact that, whatever may be the cause, whether it resides in the men themselves or in their atmosphere and surroundings, or whether it is the combined influence of both, men who work in such institutions, as a rule, stand

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* Read before the Chicago Laryngological and Otological Society, Jan. 21, 1913.

1. For purposes of convenience in writing, such specialists will, hereafter in this article, be usually designated as "oculists and aurists" or "surgeons," although I include under this one title men who do all kinds of eye, ear, nose and throat work.

at the head of their profession and become recognized leaders and teachers.

In sharp contrast with these almost ideal working conditions, let us picture the difficulties encountered by the eye and ear surgeon in endeavoring to perform his duties amid the bewildering surroundings of a general hospital. It is not too much to say that he works in an alien atmosphere from beginning to end—in which he is constantly compelled to fight for his own rights and for the rights of his patients. Everybody is interested in surgery, in general medicine, in obstetrics, etc., but hardly anybody is interested in ophthalmology and otology. This is true of the superintendent, of the head nurse, of the interns and of the operating-room nurses and other nurses. A general hospital intern, who takes any particular interest in ophthalmology and otology, and who intends to make this his life work, is a species of intern that I seldom see. The consequence is that this service is an undesired one and barren of interest to the intern, who therefore gets through with it as quickly and as easily as possible. Such unwilling and perfunctory assistance is entirely unsatisfactory to the oculist, who learns to depend less and less on it, until, through force of circumstances, he pays but little attention to the intern, and learns to do practically all his important work himself; or, if he has an assistant in his office, he avails himself of this assistance, not only in his office work, but in his hospital work as well. The assistant accompanies him in his hospital rounds, makes independent calls, dresses patients, assists at operations, etc., and in fact almost usurps the function of the intern, an improper situation, which has been largely and gradually evolved by the conduct of the average hospital intern himself. Such conditions occasionally precipitate unfavorable criticism from the medical staff and from the interns themselves, the former feeling that proper discipline is not being maintained, and the latter feeling that they are being ignored and their places supplanted by interfering usurpers. The surgeon is sometimes called on to defend himself under such conditions, and he is reminded that hospitals are training schools for doctors, and that the interns are giving their services to the hospital in exchange for experience, and that therefore it is their right to receive from each attending medical man all the instruction that the material affords. Such protests are not frequent, however, for, as a rule, the average intern is only too glad to shirk the eye and ear service; still such protests do occasionally occur, and when they occur a defense is necessary.

I have already given some reasons why the services of the average hospital intern is unsatisfactory to the eye and ear surgeon; but in addition I desire to say that our specialty is quite unlike any other specialty, and requires special training, experience, adaptability and delicacy of touch and manipulation.

I have seen eyes ruined after operation by willing but untrained and clumsy interns, and a few experiences of this kind do not advocate the desirability of training green and transient interns at the expense of human eyes. An intern may be quite capable of dressing ordinary

wounds and of doing ordinary hospital, surgical and medical service, and yet be quite incapable of dressing eyes after cataract or other operations, or of dropping medicine into the eye without inflicting pain and injury, or of dressing a head after a radical mastoid operation without defeating the purpose of the operation. Oculists and aurists, therefore, frequently form the habit of devising methods by which they can at least measurably dispense with the services of the intern, either by doing the work themselves or by deputizing it to their office assistants. Even when (as occasionally happens) an intern appears who seems to take a real interest in this department, the surgeon's general line of conduct has become so well defined that it hardly seems worth while to change it for the brief space of one intern's service in this particular department.

And this brings us to a consideration of the great undesirability of short intern services in general hospitals. It is a fact that no intelligent surgeon will dispute that the usual short term of intern service in a given department is not conducive to good work, and is irritating and unsatisfactory to all concerned, for no sooner does an intern begin to wear off the newness and become really useful than he is transferred to another department, and a new man presents himself to be initiated into the mysteries of the department. This difficulty is overcome in some hospitals by allowing interns to serve only in a limited number of departments during their months of duty. This plan seems to be quite satisfactory where it has been tried, but I believe that some better method will be devised by those who are giving special thought to the subject. Certain it is, that until eye and ear surgeons can command the services of interns for many months of continuous service, these young doctors, however willing and earnest they may be, cannot be of any great utility to this department. At the present time, and under existing conditions, hospital superintendents and interns, superintendents of nurses and nurses seem to think that the main object of hospital work is to educate interns and nurses. My own opinion as to the use of hospitals is that they exist for the purpose of benefiting the sick and for the convenience of physicians, and incidentally for the education of interns and nurses.

And this leads naturally to the subject as to how the eye and ear department in a general hospital can best utilize the services of the general hospital nurse. When it comes to being of any real assistance to the surgeon in his hospital work, the general hospital nurse is nearly a hopeless proposition. This is not an ill-natured criticism, it is simply a statement of an unfortunate fact; neither is it a reflection on the nurse or her intelligence or willingness, as this statement is only possible because of circumstances and conditions over which the nurse has no control, namely, the constant changing of her location and occupation from ward to ward and from service to service. Between educating new nurses and new interns and patiently enduring their mistakes and shortcomings, the path of the attending oculist and aurist in a general hospital is certainly not strewn with roses. I wish to again emphasize the fact that I am not blaming these young people; indeed, I am not blaming

anybody. I am simply endeavoring to present my subject truthfully, for the purpose of ultimately producing better conditions.

The oculist and aurist in a general hospital has his patients scattered from ward to ward and from room to room. As he progresses from place to place he is constantly confronted with a new nurse and with new conditions. If an intern goes with him, he may carry a tray of drugs, instruments, appliances, etc., for whose reliability as to cleanliness, aseptic qualities, etc., no one can vouch, as it is no one's duty in particular to guard the dependability of these articles. He is, therefore, constantly in fear of using impure solutions, dirty droppers, infected ointments, etc. Sometimes each ward or room contains the particular articles he intends using on the patients in that particular locality; but here, again, he is confronted with the same fear of contamination that is in evidence when he is using solutions, etc., from a migrating tray whose reliability is more than doubtful, and he is almost certain to want something, such as a solution, a light, a probe, an ophthalmoscope, etc., that is not at hand and that takes much time and confusion to secure. And so he proceeds from one portion of the hospital to the other, changing nurses from place to place, encountering fresh obstacles and annoyances as he continues in his calls, dressings, etc., until he emerges from the hospital tired and dissatisfied with his work and the conditions under which he is obliged to prosecute his labors. Besides this, the proper fulfillment of the surgeons orders in the interim between his visits, in a general hospital, is a practicable impossibility. The ever-changing ward nurse is quite incompetent to instill drops into the eye or to irrigate an eye, or to put ointment into the eye, or to change bandages, or to irrigate or dress an ear, etc. And as these things cannot be done properly during the surgeon's absence, he either dispenses with such necessary attentions altogether, or has them performed as infrequently as possible, in order to guard against the occurrence of damage occasioned by an inexperienced and therefore incompetent, not to say dangerous, nurse.

The operating-room conditions for the oculist and aurist in the general hospital are thoroughly unsatisfactory. The head operating-room nurse is by no means a fixture in most hospitals, and her time is usually absorbed in laparotomies, amputations, etc., so that when the eye and ear surgeon desires to operate he is usually assigned to one of the assistant nurses. There are several of these endeavoring to obtain operating-room experience, so that it may easily happen that the surgeon may be assisted by an ever-changing new nurse in his operations from day to day. He is thus irritated and annoyed, and therefore more or less incapacitated from doing the best work, by being constantly obliged to coach the nurse in her duties, and by using poor knives, scissors, sutures, etc., that are out of order, owing to the lack of proper inspection. In fact, the general hospital operating-room nurse has no conception of the instrumental necessities of instruments for the proper performance of ophthalmic surgery. Her ideas of surgical instruments are based on those required to do large surgical work, and the necessities of a cataract or iridectomy knife, or a pair of de Wecker scissors, or a proper needle,

are apparently beyond her conception. She drops cataract knives into a tray, with perfect unconcern, and allows them to collide with the sides of the tray, without any conception of the delicacy of the knife, or with the fact that it should not be used at all if its point is not perfectly true Nor does it do any good to instruct her, for she may be gone from her operative experiences to-morrow, and a new face, with all of its discouraging possibilities, may confront the surgeon. These are some of the difficulties that constantly confront the oculist and aurist who endeavors to do his work in a general hospital. I have not completely covered the ground by any means, but I have perhaps said enough to afford an insight into the subject. Again I wish to disclaim any intention of critical indulgence on hospitals, interns or nurses, they are merely the natural products of misconceptions.

Eye and ear work was the first to become isolated, and it still is the most clearly defined of all the specialties. Almost all general physicians and surgeons refuse to do any appreciable amount of eye and ear work. They frankly admit their ignorance, and do not care to overcome it. This idea prevails amongst interns and nurses, who consequently take but little interest in this clearly defined and isolated specialty, which is therefore neglected as much as possible during their hospital service.

Having thus, at least to a degree, called attention to certain unfortunate conditions interfering with desirable eye, ear, nose and throat work in general hospitals, let us endeavor to see if something cannot be done to remedy such conditions.

Concerning the intern situation, I have the following plan to suggest: What is needed is a long service of perhaps one year. Of course, it would not be possible to dictatorially appoint staff men to a year's service of this nature, without first gaining their consent; but if it was known that a certain hospital had a large eye, ear, nose and throat service, to which men desiring such work could be assigned for a year or more, I am inclined to believe that the position would be kept constantly filled. It should probably best be understood that while such interns would consider their eye, ear, nose and throat service to be of primary importance, yet they would be expected to work in other departments if their time was not fully occupied. This would probably be an additional incentive to secure the position, for most young doctors are anxious to round out their education, and to secure as much general knowledge and experience as possible. Eye, ear, nose and throat hospitals are comparatively few in number, and there are many young men desirous of special hospital training, who are unable to secure an internship in such special hospitals who would eagerly grasp at a prolonged special service in a high-grade general hospital. Such hospitals could, if thought desirable, issue a special certificate, to those men who have served a year or longer in this department. I believe this plan is feasible and practicable, and could be successfully carried out in hospitals having a sufficiently large service to be a temptation to the embryo specialist.

This plan as just depicted, is now being carried out in St. Luke's Hospital in this city. Some time ago Mr. Curtis, the superintendent, told

us that if we desired it and he could find a suitable man, we could have our own exclusive and continuous intern. Some pessimists believed a man could not be found who would be willing to give up a year's time to what eye, ear, nose and throat experience he could secure in a general hospital, but with remarkable promptness Mr. Curtis had about fifty applications for the position, from which he selected a man who is now the special eye, ear, nose and throat intern of St. Luke's Hospital. He will always have one or two junior interns working under him, who will change their service once in two months. The chief intern will have complete charge of the indoor and outdoor eye, ear, nose and throat service of the hospital, and at the end of his year's service he will be given a proper certificate. He will be present at all operations, and will himself do all the operating it is possible to entrust in his hands. It should be clearly understood that this intern is the eye, ear, nose and throat intern for the entire service, and that his services are just as much at the disposal of specialists that are not on the staff, as they are for staff members. There is no salary connected with the position, but the intern is supplied with his living expenses. He is at liberty to do all the pathologic work in the laboratory he desires, and we hope soon to have a special paid eye, ear, nose and throat pathologist at St. Luke's as we all recognize that the average general pathologist is not qualified to perform satisfactory pathologic work in our department.

Concerning the nurse situation, I believe we have at St. Luke's Hospital gone a long distance in solving this vexed problem. Some years ago, recognizing the necessity for better service, we secured through the cordial cooperation of the superintendent, Mr. Curtis, and the head of the training school, Miss Johnston, a nurse who was assigned especially to our department. She was an undergraduate and her term of service was for three months. Her first duty was to us and to our patients, but if her time was not fully occupied she could be assigned to other work. She kept the eye and ear trays stocked with fresh dependable solutions, ointments, droppers, instruments, pads, bandages, cotton, etc., etc., and always made the round of calls with the surgeons. She dressed and treated the patients between visits, kept the operating-room instruments in order, and was always present at operations to be of all possible assistance, although she did not supplant the function of the operating-room nurse. Just before her term of service expired another nurse was appointed to take her place, and for several days she instructed the new nurse in her duties, so that the break in service would be as little apparent to the surgeon and patient as possible. In this way, it will be observed, four special nurses were educated in a year, and these nurses have been most valuable to the staff, who always request the employment of these nurses, in case private nurses are desired in eye, ear, nose and throat cases. This plan worked very well for some years, but the need of continued service was constantly apparent to all concerned. Just as the nurse became of real service and dependability she would be exchanged for a new one, and then the educational process would begin all over again. The superintendent then still further improved our department

and enhanced the possibility of superior work by giving us an experienced graduate nurse to stay permanently in our service. She receives a regular salary, lives at the hospital, is an officer of the institution and has immeasurably lightened our burden and relieved our responsibilities. She has four assistant undergraduate nurses a year, who are assigned to her service, and who are instructed by her. This is done for the purpose of relieving the special nurse of certain routine work, and also for the purpose of continuing the process of educating nurses concerning the duties of eye, ear, nose and throat nursing.

The possession of our special intern and special nurse, has led us to hope for still better things in the future. We hope and believe that if our present conditions work harmoniously and successfully, and if our earnestness and usefulness to the hospital are further demonstrated, that within a short time a floor of the hospital will be devoted to our service, where we will have a superintendent, with nurses, sufficient interns, with a chief intern in charge, wards, rooms, operating-rooms, dressing-rooms, etc.—in short, a hospital within a hospital, where the cares of management will be lifted from our shoulders, and where the advantages of a special hospital will be at our disposal.

One of the most useful steps for the upbuilding of a successful eye, ear, nose and throat service, in a general hospital, is the establishment of a regular day and hour for an operating clinic, where operations shall be performed, and where doctors and medical students shall be welcomed. If there is sufficient material, two or more operating days should be established, and these days should be filled with unfailing regularity and should be made as interesting as possible. At St. Luke's we now have two such days. On Thursday afternoon for many years all kinds of eye, ear, nose and throat operations have been performed, and recently Tuesday afternoon has been set aside for all kinds of nose and throat work. Before long it is believed that more days will have to be added, and we hope that soon continuous operative work in our department will be performed every day in the week. The necessity for filling up these operative days is a great inspiration in the search for proper operative material. Besides this, it magnifies the importance of the department, keeps the beds filled, keeps the special intern and nurse busy and undeniably maintains and improves the technic and experience of the operator.

Every hospital, supporting a live eye, ear, nose and throat department, should possess an active dispensary for the treatment of these diseases, which should be under the charge of the eye, ear, nose and throat surgeons of the staff, aided by the chief eye, ear, nose and throat intern and his intern assistants. Such a dispensary is desirable, not only because it affords experience in refraction and other general work in these specialties, but because it must surely become a most important source of operative supply to the regular operative clinic. Outside of special hospitals or infirmaries, where the daily attendance of patients is abundant, it is not an easy matter to keep one, two or three operative clinics a week well supplied with material. Every effort should be made

to bring this about, and of the several available methods, a good live dispensary is one of the best.

This paper has been written with the purpose of suggesting how the eye, ear, nose and throat work in general hospitals can be improved and made better and more convenient and useful for all parties concerned.

I have explained to you what we have done and are trying to do at St. Luke's Hospital in this city, but I do not wish to be understood as claiming a perfect service at this institution, as much remains to be done. But of one thing I am sure, viz., that the service in our department, under the present conditions, is infinitely superior to what it once was, and that the ideas carried out in this hospital might with great benefit be put in force in all general hospitals.

7 West Madison Street.

DISEASES OF THE UVEAL TRACT DUE TO AUTOINTOXICATION *

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AND
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The aim of this paper will be to report the number of cases of affections of the uveal tract, due to autointoxication, coming under my care within the past year and a half. The report will be almost entirely clinical, not going into the scientific detail of the diseases at all, giving only the outline of the conditions found, somewhat of the treatment, and the results obtained.

Dr. Mack has kindly consented to discuss the paper from the side of the autointoxication, so that it will relieve me from a rather embarrassing position, as the ophthalmologist at the present time knows very little of that subject, the internist not much more. It is only lately that we have begun to appreciate that autointoxication may be, and often is, the cause of many of the diseases of the uveal tract, the etiology of which has been a mystery to us.

We have suspected for a long time that the cause of many of the diseases of the uveal tract have been due to some poison from somewhere, but excepting in a very few cases, we had never thought to go so far as the intestinal tract as the cause of many of them. I am surprised that we, as ophthalmologists, had not looked to this source for the cause of many before, as our experience with uveal tract disease through diseases of the kidney should have been a pointer to us of the way to find the cause of very similar diseases of the uveal tract.

Many of the cases of chorioiditis that have passed through our hands, with a very indefinite origin, have undoubtedly been due to autointoxica-

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tion. I can think back now over a number of cases of inflammatory trouble of the chorioid and the posterior portion of the eye, the cause of which I could not determine, which I now believe were due primarily to infection from the intestinal tract. That will appear later from a case that I will report.

I remember very distinctly a number of years ago of a case of chronic uveitis in which it was impossible to elicit any history of specific origin, and at the time the patient inquired of me if it could be possible that his trouble came from some disturbance of the stomach or intestines. At that time I told him that I could not say, that it was possible it might have come from that source. As I look back at this case, I am now sure that the chronic uveitis was due to intestinal trouble, as I know the patient did suffer from some intestinal disturbance. He has removed so far from the city that it is impossible now for me to investigate the case, but I believe that a change of living, a change of climate and a change of work has probably cured his intestinal trouble, as he has written me that the disease is not now progressive. I am very sorry that this patient is not within reach so that I could make a more extended research of his case.

I hope, by the history of these cases and the discussion, which surely must follow the same, to bring out before the society some valuable information.

My first experience with a disease of the uveal tract, due to auto-intoxication, occurred about ten years ago, when two cases came under my care.

Mrs. C. consulted me in regard to the loss of vision of her left eye only. Vision had been reduced to about 3/10. Upon an examination of the fundus, I found a condition surrounding the macula very much like that which we find in albuminuric retinitis. The form of the white deposits was much more regular, also lacking in the peculiar tendency of the exudate in the albuminuric retinitis to follow along the arteries. It was confined to the macular region and was a trifle more than a disc in size. At that time, knowing very little and much less expecting that the condition found was due to infection from the intestinal tract, upon general principles I proceeded to attempt to cure a very obstinate constipation in my patient, as well as treatment of the local condition. I put the patient upon a course of calomel and sent her to an osteopath, as well. Some time later the patient reported to me an absolute return of vision to normal, and upon examination of the fundus I found that the exudate had entirely disappeared.

My second case was very similar to the first, and occurred in close proximity to it. The fundus was much less involved, and the vision also. This patient was not suffering from obstinate constipation, but from the experience that I had had with the former case, I put her upon a course of calomel, with a result that within a very short time the eye symptoms disappeared.

I now believe that had these two patients been examined with the same care that we now devote to similar conditions, we would have found the evidences of intestinal diseases.

These two cases should have set me to thinking seriously of the possibility of many of our diseases of the uveal tract being due to auto-intoxication, but at that time very little was known or thought about the subject, and as I had no more similar cases, they passed from my mind.

The next case that came under my observation was that of a physician, who had recurring attacks of iritis, which were readily controlled by atropin, hot applications, etc. The various tests by Wassermann and tuberculin resulted in negative findings. At that time the subject of autointoxication in connection with diseases of the eye was just beginning to be developed. A thorough investigation of this patient's acidemia and indicanuria developed that he was suffering from a severe case of autointoxication. He was put upon a non-protein diet, with the usual treatment of bowel flushings. The result has been that he has had no return of the iritis since that time, about two years. He tells me that after a very few meals of a protein character he will begin to feel the symptoms of a returning iritis.

Another case, in another physician, very similar in character, with recurring iritis, in which an examination was made, showing that he was suffering from an acidemia and indicanuria of a milder degree, and was put upon the same treatment as the former case, but the result was not encouraging at all. Polypi were removed from the superior portion of the nasal cavity, with an entire relief from the recurring iritis.

I speak of this case to show that a patient may be suffering from recurring iritis, may have acidemia and indicanuria, and yet that be not the cause of his recurring iritis.

The next case that I wish to report is one in which I shall give more minute details.

Miss C., of Cleveland, O., was referred to me with the following history: For three years she had been suffering from recurring attacks of irido-cyclitis, having been treated each time in Cleveland with the ordinary local remedies, combined with the general remedies in such cases, the results after each attack leaving her with poorer vision than before. Upon examination I found the vision right eye nothing, counting fingers at two feet, left eye vision 6/24. Upon inspection of the pupillary area I found considerable exudate filling the same, a very small opening in the left allowing the vision equalling 6/24. Upon the instillation of atropin in both eyes, no dilatation was possible, of any consequence, the pupil becoming slightly irregular at various points. The eyes were sensitive to light, but at this present time were not under the influence of an acute attack.

A physical examination showed the patient to be apparently in good health, no constipation, no apparent evidences of bowel trouble. There were none of the usual signs of autointoxication, such as drowsiness, lassitude and inattention to details of business, etc. The patient was unusually active and bright mentally. Naturally the suspicion was that the etiology was due to inherited condition. The Wassermann test was made, also a tuberculin test, in both cases very carefully, showing negative results. At this time I did not suspect an autointoxication, as there were none of the general symptoms usually occurring in that condition. As the left eye had good vision for distance and fair for near, I did not continue the use of atropin in this eye, but I put the right eye under frequent instillations of atropin, also increasing doses of dionin, putting the patient on continued increasing doses of potassium iodid. Under this treatment absorption progressed slowly, and the pupillary margin of the iris began to break away from the exudates binding it to the lens capsule. This treatment was kept up for nearly two months, with such a surprising result that the patient was able, at the end of this time, to read with difficulty ordinary newspaper print, easily the larger book type.

During this time there were no attacks of cyclitis in the right eye, but one or two mild attacks in the left eye. Remember, in this time no atropin had been used in the left eye at all after the first few instillations for diagnostic purposes.

Having had such a brilliant result in the right eye, I was considering putting the left eye also under atropin and dionin. At the progress the patient was making, we were both more than delighted, when all of a sudden I received a

telephone message at my home that the patient had suddenly gone blind in the left eye, the one that we had not been treating. I immediately had the patient come to my office and met her at midnight, when I discovered a very severe attack of secondary glaucoma, with very high tension and almost complete blindness in the left eye. Upon consultation with another oculist, it was not considered wise to attempt to reduce tension with myotics, but rather to take the chances of more exudate following an iridectomy, with a possible hope that it might have some influence upon the cyclitis and iritis.

The operation was performed at once, with brilliant result so far as tension was concerned, with the return of vision as well, but unfortunately, as was explained and looked for at the time, a gradual increase of the exudate occurred over the whole posterior surface of the iris, without a severe iritis. Three days after the operation vision was fairly good, but was gradually reduced by the excess amount of exudate produced.

Just one week after the attack of glaucoma in the left eye, an attack of secondary glaucoma of the same character occurred in the right eye, and a similar operation was performed upon this eye, with the same result. Of course, the patient at this time had very much reduced vision, but the inflammatory processes were very much improved, and the eyes immediately became quiet, and we again returned to our treatment of both eyes with atropin and dionin. At the end of six weeks, sufficient absorption of the exudate had gone on so that vision was very much improved, so much so that the patient could go about by herself, though the space of our iridectomy was still blocked with exudate.

The proof that the absorption was going on rapidly was shown as slowly a bombic iris occurred.

From this time on improvement was more rapid, until the latter part of December, when a very severe attack of irido-cyclitis occurred suddenly in both eyes, without increased tension. At this time I requested Dr. Mack to make a thorough examination of her intestinal tract, and to our surprise, we found a deplorable condition, Dr. Mack reporting that it was one of the worst cases he had ever encountered. I immediately put her in the hospital, and carried out very thoroughly his suggestions in regard to the treatment of her intestinal trouble. Almost immediately the improvement was perceptible in her attack of cyclitis, the eyes at once quieted down, and absorption went on.

At the end of two months the eyes had become so much improved that I decided to perform a preliminary buttonholing of the iris of the right eye, through the space left by my former iridectomy. The result was so good that the patient is now able to go about and take care of herself.

A rather singular accident happened to the left eye; very suddenly the entire exudate in the iridectomy space and in the pupillary area gave way from the anterior capsule of the lens and the whole was found one morning projected against the posterior surface of the cornea.

The patient has up to the present reading had no return of her iritis or cyclitis. She has been kept strictly upon a non-protein diet, with occasional returns to the treatment of the intestinal tract.

This case shows very plainly that the etiology of it was due to the intestinal disturbance.

The next case that I report is a rather singular one given to me by Dr. S. M. Hager.

For three and a half years the patient suffered with phlyctenular keratitis. No history of rheumatism, gout, syphilis or trauma. Had in this time several attacks which were relieved with boric acid, atropin and salicylates, with potassium iodid; about three or four attacks in the two years following the first. About a year ago he suffered from a very severe attack in which the iris was involved, a kerato-iritis, which yielded very slowly to the usual treatment. In October he had a recurring attack of kerato-iritis. It was found that he had a very chronic constipation, the bowels only moving three to four days apart, and

then only when some purgative was taken. He was dull, sleepy, tired and devoid of energy, etc. Suspecting that his intestinal tract might have something to do with the kerato-iritis, he was referred to Dr. Mack. After being under treatment for his autointoxication, a change in this kerato-iridocyclitis was very marked indeed, and at the present time the eyes are quiet, without evidence of disease. For this case I am indebted to Dr. Hagar and Dr. Milton H. Mack.

The last case is one of entirely different character from the others. Mr. H., whom I had fitted for glasses some two years ago, came to me requesting a change of glasses. Upon examination I found that the vision of the right eye was reduced to about 6/24, the left eye remaining the same as before. Upon dilating the pupil, and examining the fundus I found several patches of chorioidal inflammation somewhat away from the disc and to the temporal side. By their appearance the disease could not have been of very long duration. Without further questioning, I had a test made to find out whether he was suffering from autointoxication, and found what I was looking for, not a very severe condition, but sufficiently prominent to make me feel sure that here was the cause of his chorioidal trouble. I at once put him upon a non-protein diet and intestinal flushings, and within a very short time there was evidence of the subsidence of the acute chorioidal inflammation, and vision improved to about 6/12. At first he was rather a faithful patient to follow instructions but lately he has not seen fit to continue absolutely upon a non-protein diet, but there has been no return of the acute symptoms of chorioiditis. His general health has improved very much indeed, and he is a man eighty years of age.

In the summer of 1911 I discovered that my ability to read for near would be interfered with by some opacity of a diffuse character, in both eyes, more particularly the left. In attempting to read, there would occur a blur over a large portion in the central line of the page. This was yellow in character, having no definite form, except very nearly circular, a hazy mass. The density was about equal in all sections. It grew so slowly that at first it did not annoy me, but by the first of September it became quite difficult for me at times to read fine ordinary newspaper print. By sudden shaking of my head I could dislodge the opacity sufficiently to enable me to read for a few seconds at a time.

Undoubtedly I had the commencement of a chronic cyclitis, as other opacities of a different character were also visible, but the diffuse one was the most annoying.

Following an attack of erysipelas the year before, I had swollen feet. Thinking that it possibly might be due to some kidney trouble, I had a very thorough urinalysis made, at which time it was discovered that I was suffering from a bad case of acidemia and indicanuria. The general symptoms that had followed my attack of erysipelas were the general lassitude, considerable loss of memory and inability to concentrate my attention on one subject for any length of time. A general sluggishness developed as well.

I at once put myself on a non-protein diet, also the usual treatment of intestinal flushings every night. After following the vegetable diet for some time, a decided improvement of my general health was apparent. Also after about four months I recognized a very decided decrease in the intensity of the opacities in the vitreous. The general symptoms also continued to improve, so that the opacities were scarcely visible. Having been on a non-meat diet for more than a year, I am now indulg-

ing very sparingly at this time on a mixed diet, though keeping up the flushings.

That I might determine fully whether the chronic cyclitis was due to autointoxication, I refrained from all other treatment of the eyes. I have now been on a non-protein diet, with the exception of a few trial meals, since a year ago last September. I find that the diffuse opacity of the right eye has almost entirely disappeared. That in the left is a trifle more prominent, but in both eyes, they have so nearly disappeared, that it is at only rare intervals that I become conscious of their presence, and that only when I look for them. The individual opacities have also been very much modified in character, so much so that I hardly recognize them, except on special occasions.

These cases are undoubtedly of autointoxication type, proved so by all promptly getting better under treatment of the toxic condition only.

Because of the success of this series, we must not conclude that all diseases of the uveal tract are due to autointoxication. Yet we should be on our watch in every case of uncertain origin of diseases of the uveal tract.

The subject is so new, and we know so little about it, that one can only give the bare clinical facts, as in the above series, hoping that in the future we will find out more about the toxic conditions.

Feb. 20, 1913. Since the above paper was read, and while on a mixed diet, I found in my own case, about January 1, that the opacities were rapidly returning, and my urine again showed large quantities of indican. I again returned to a non-proteid diet and at this date find that the opacities have again nearly disappeared. That the intestinal condition is the source of my chronic cyclitis cannot be doubted. At no time have I instituted any local eye treatment, leaving the cure entirely to the improved intestinal condition. That I shall ever be able to return to a mixed diet is doubtful.

I shall very strictly continue my present diet for another year and then make an attempt to return to a mixed diet.

The only effect upon my physical condition that I noticed from being upon a strictly vegetable diet is that I have not the endurance that I had during November and December, while upon a mixed diet.

DISCUSSION

Dr. Milton H. Mack: This is a very interesting subject. For several years I have been paying considerable attention to it. I have seen some of the cases Dr. Hawley reported. The one he reported in detail was one of the most intense cases of autointoxication I ever saw. The odor emanating from the patient's body was exceedingly nauseating. At the sigmoid I found a mass as large as my fist. It could be broken up easily, and the treatment later removed it. It is now about three years since the subject of eye disease due to autointoxication was suggested to me by an oculist of this city who was a patient of mine. He asked me one day whether I had ever thought of a connection between the two. I had not, but it started me thinking. Within a week a case of iridocyclitis was referred to me. The patient had had recurrent attacks, on an average of every three months, for a period of six or seven years. He said he had consulted nearly every medical man in the city before I saw him. I treated him and a few days ago he told me that he had not had an attack for two and a half years. He must, however, keep his alimentary canal open. If he allows it to become clogged in any way, even for a short time, he can feel something wrong in the eye. These attacks come on with constipation, as a rule. There is mental depression in

every case, frequently headaches. I have seen six or eight of these cases so far. A temporal headache usually initiates the attack. Examination of the urine shows a marked indicanuria in nearly every case. In the case of the physician I mentioned there was an enormous dilatation of the stomach, and I think he then had an ulcer of the pylorus. He refused treatment for the stomach condition. The case Dr. Hawley reported, which was referred to me by Dr. Hager, I have had under observation for a short time only. There were six or seven attacks within a period of two or two and a half years. They were very severe. Ulcerative keratitis and iridocyclitis were present. It was only a week or ten days when the treatment gave the patient relief. The majority of these patients are, as a rule, heavy meat eaters. I take them off the proteid diet, put them on vegetables and fruit, produce elimination by the bowel, kidneys and skin, by means of intestinal irrigations, which I give myself, but I do not use them as Dr. Hawley suggests. I use recurrent enteroclysis at a high temperature, generally 115 to 125 degrees F. I pass the tube into the bowel and allow from one-half to one pint of water to pass into the intestinal canal. This is about all the patient can take with comfort. This is allowed to siphon out and then I fill the bowel up again, repeating the procedure until I have used from one to two gallons of water. This stimulates kidney action, and also relieves the intestinal canal. It gives free elimination from all sources. I have three patients under observation now in whose cases there is some doubt as to the exact etiology of their trouble. They have all improved, however, and I am keeping them under observation to see what result I am going to have. The proof of the pudding is in the eating, and that is the only way we can demonstrate that these conditions are due to autointoxication. It seems almost impossible to conceive of treating an irido-cyclitis or an ulcerative keratitis by colonic flushings, but when you can see these cases clear up as I have in the ones that have come under my observation, you will become as firm a disciple of this method as I am. Unless you are absolutely positive of the cause, begin at once with elimination. The result will astonish you. I take no chances with these patients treating themselves, as they will not do it properly and then the physician is blamed for the failure. So much depends on the proper handling of these cases that I do not wish to assume the responsibility when they take the flushings themselves.

There is no question, that many cases of blindness might have been prevented had the cause of these disturbances been known and the proper treatment instituted.

SUGGESTIONS FOR FACILITATING THE EARLY TREATMENT OF MENTAL DISORDERS*

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The treatment of mental diseases is not an encouraging task, especially if complete restoration of mental health is taken as the index of success. Under favorable conditions it is doubtful whether more than 20 or 25 per cent. of recoveries are to be had. These figures seem the more insignificant when compared with the recovery rates of hospitals for general physical diseases. In all fairness to the practitioner of mental medicine I feel it should be said that his failures are more obvious than those of his more fortunate colleagues in general practice. The internist

*Read before the second annual conference of the Illinois Society for Mental Hygiene, held at Chicago, January 18-25, 1913.

does not mend the leaking valves in organic heart disease; the diseased kidney of the chronic nephritic cannot be restored to normal integrity by all the arts of man or nature, but the affected individual may with his physician's help live a life of usefulness and comparative comfort. The alienist, on the other hand, in his failure to solve the riddle of dementia praecox and kindred disorders finds himself confronted by an army of dependents filling our state hospitals for the insane, a sad monument to his efforts.

Prophylaxis must ever be the hope of society in dealing with the problem of insanity. General paralysis of the insane is a fatal, incurable disease; but syphilis, its main etiologic support, can be cured and should be preventable. The proper education of those children who show early outcroppings of neuropathic and psychopathic states may prevent the occurrence of functional psychoses later in life. The study and teaching of prophylaxis is, I take it, one of the objects of this and similar societies. The field is stupendously large and extensive results should not be expected immediately. Much depends on popular education, and this takes time.

Meanwhile the matter of treatment for those who are now public charges must not be shoved aside because the outlook is not promising. In mental disease as in physical maladies it seems logical to assume that improvement or recovery should be more easy of accomplishment when the case comes under treatment in the incipient stage. The importance of early treatment is indicated by these facts: 80 per cent. of recoveries occur during the first year of the disease; on the other hand, 40 per cent. of the hospital death-rate occurs during the first year of residence. This percentage is made up in part of cases of senile dementia and general paralysis of the insane which have been cared for at home until the disease has reached an advanced stage. In these cases fatal termination is inevitable. But there are included also many cases of the acute recoverable psychoses. These latter cases are frequently kept at home until their condition becomes very serious, and the patients may then be committed and removed several miles to a state hospital. Many of these cases I have admitted with pneumonia, possibly due to the exposure of the patient while in a weakened state. These occurrences are to be regretted — the more so because the prognosis as regards mental recovery is good.

There are many reasons why cases are not brought under treatment earlier. The family and the physician in charge of the case may not realize the nature of the symptoms until the condition is far advanced. The relation between the disease and its causative factor is not seen, and they see no reason for taking the patient away from his home environment. They may attribute the disorder to a blow or fall years before, or perhaps to prenatal influences. Many general practitioners think there is little use in trying to treat mental disease and they may inform the family that it is a little nervousness that will soon be recovered from. However it may be, many patients come in with a history of several months' or years' duration of the disease, and favorable results are not to be expected from hospital treatment at the stage of the disorder presented.

The active campaign of public education in regard to tuberculosis is now producing good results, and it is to be regretted that the same plan has not been carried out in regard to insanity. Meetings and exhibits similar to this could be held in other cities of the state and the public invited. With the cooperation of men and women in the state service I believe much could be done to dispel many of the mistaken ideas entertained toward this problem. That there is need for such movement, I think no one will deny who is at all conversant with the facts. Adolf Meyer, in the *Journal A. M. A.*, for June, 1910, says in regard to this matter: "To judge from contact with many trustees and visitors these institutions (state hospitals) are really little known by the public, little known even by the authorities controlling these hospitals, and by the judges and the average physicians and other persons likely to be appealed to for advice when the conduct of the patient becomes difficult to control." I might quote two examples illustrative of lack of confidence in the state hospitals. In the first case, a well-to-do farmer had brought his 20-year-old son for treatment, and when asked for the history of the case seemed rather indifferent, and finally said, "It's no use, doctor, I have had him to a specialist who says that he has an incurable disease and will not live over a year." He produced letters from this doctor to support his statement. It developed that he had taken his son, on advice of his family physician, to a large city for expert diagnosis. Evidently he did not fall into good hands. An *x*-ray photograph of the patient's skull showed unduly heavy frontal eminences. There was also a partial paralysis of one lower extremity accompanied by atrophy of certain groups of muscles. On these findings a diagnosis of general paralysis of the insane was made, and it was explained to the father that this was an incurable, fatal disease. No Wassermann test had been made and no history of syphilis obtained. I could see no connection between the paralyzed limb and the mental symptoms, which were frankly those of the maniacal state. Laboratory tests strengthened this opinion, and I later found by writing to another hospital that the young man had suffered from an attack of anterior poliomyelitis, which accounted for the paralysis. The patient is now practically recovered and is back at his former occupation in little over a year's time since his admission. Within sixty miles of this patient's home was a state institution for the insane, where any member of the medical staff could have given the father better advice than he received. In the second case, a young man had brought his wife to the hospital after having maintained her at a private sanitarium as long as his limited means permitted, and had consented to her commitment as a last resort. He was taken through the receiving building and seemed greatly interested and remarked that he did not know that there was a place like this in the state where mental cases could be cared for. When asked what he had expected to find, he replied, "I thought an asylum was a building like a soldiers' barracks with a big yard enclosed by an iron or board fence where the patients could be turned out by day, herded by attendants to keep them from hurting one another and kept under shelter for the night." This man's idea of a state hospital is not at all

rare among people who have never had occasion to come into contact with the state institutions. False impressions are created by sensational newspaper stories of abuse alleged to have occurred within hospital walls. One frequently sees articles about inmates supposedly insane who have been deprived of their liberty by designing persons for the purpose of obtaining control of property. Political attacks are conducted for personal gain at the expense of the public welfare. Unscrupulous members of the legal profession who do not hesitate to make damaging statements in prosecuting writs of habeas corpus may promote the idea on the part of the relatives that the patient is being deprived of his liberty without adequate cause.

Our institutions were formerly largely custodial. Mechanical restraint was freely and excessively used. The reputation of the old custodial institution, unfortunately, still persists in the popular mind, and hampers the work of the modern hospital.

The lack of proper cooperation between the general practitioner and the state hospital is an important factor in keeping many cases from coming earlier under trained observation. The family physician is the first to see the greater number of cases, and with him rests the responsibility of advising the family in regard to the best course to pursue. Too often he has not had the requisite training to do this. The average medical curriculum makes little or no provision for the study of psychiatry. This matter has been the subject of a symposium at a recent meeting of the American Medical Association, and the subject has received better treatment in the group of papers presented there than I can give it here. In the last issue of the *Journal of Abnormal Psychology,* Adolf Meyer has given his views on the desirability of making psychology a part of the medical course.

Our form of commitment, with its attendant evils, is another factor which keeps many patients from coming to the state institutions until their mental symptoms are very pronounced. In most states a legal process, resembling that used in criminal cases, must be gone through before a patient can be placed under treatment in a public institution. His resentment is aroused by the entrance of an officer of the law with a warrant for his arrest and removal to the detention ward, or as is too often the case, the county jail. He may be compelled to listen to testimony from his relative, his friends and his physician. He witnesses the making out of legal records to be filed at the court house, where they will remain even in the event of his early recovery as permanent records of his mental incompetency. On the other hand, the patient may have no objections to entering a hospital. The judge may not wish to issue the order of commitment unless threats or evidence of violent tendencies can be shown, or may insist that the doctor characterize the patient as insane before he will issue the order. This is inconsistent with our method of treating the sick. We do not wait for a case of small-pox or diphtheria to develop symptoms of an alarming nature before instituting treatment and quarantine. The delirious typhoid or pneumonia case may be taken to a hospital, restrained in bed if necessary, and subjected

to treatment according to his physician's orders without any time being lost over legal formalities. The voluntary commitment law was designed to cover this class of cases. Illinois, Connecticut, Massachusetts, Rhode Island, Pennsylvania, Michigan and New York now have such laws. It is obvious that this provision can apply to but a limited number of cases. Many disorders, by their very nature, render the patient incapable of taking this step in his own behalf. Other cases react to delusions in a dangerous manner, present a strongly antisocial attitude, and must, of necessity, be committed. There seems to be some difference of opinion among hospital authorities in regard to the desirability of voluntary patients. It is true that they may be a source of trouble. In some instances they do not cooperate well, and may insist on leaving the hospital at a time when their condition does not warrant it. They require a good deal of attention, and do not like to associate as a rule with all types of mental cases. Manhattan State Hospital in New York has a separate building for voluntary cases, and I believe this is desirable where the hospital has the room to afford for this purpose. I have written several letters to hospital superintendents where the law is in operation. All replies are favorable. Dr. W. L. Russell of Bloomingdale Hospital, New York, says he considers the procedure a success. More than one-half of his patients for 1911 were voluntary cases. Dr. E. N. Brush, of Shepherd and Enoch Pratt, states: "I see no reason why patients should not come to this and similar hospitals as freely and with as little legal formality as they enter general hospitals." During the last five years more than one-half the admissions to that hospital have been voluntary. Butler Hospital, Rhode Island, reports 46 per cent. of admissions voluntary. The state hospitals of New York received 312 voluntary commitments in 1911 against 6,947 regular. The private hospitals, under state license, received 832 voluntary and 387 regular. The Hartford Retreat, Connecticut, received out of 160 patients, 90 voluntary. It has not been possible to estimate the number of voluntary commitments in Illinois, because these statistics have not been compiled. Watertown State Hospital admitted in 1911, 282 cases, of whom 70 came on voluntary application. This is a better record than I have found for any other state hospital. This large percentage I believe to be due to the fact that the hospital is in a rural district and seems to stand in a closer relation to the public than state hospitals located near the larger cities. Many of the county judges and general practitioners cooperate with the institution in this regard. The newspapers are favorable in their criticism of the institution, and political attacks on the management are seldom met with. The medical staff takes part in the meetings of the county medical society, and the physicians of that organization seem to be friendly in their attitude toward the hospital.

On examining the records of voluntary cases at the above hospital, I find that it has been necessary to resort to regular commitment in less than 5 per cent. The percentage discharged as "recovered" and "improved" is much higher than the average hospital rate. This indicates that the acute case applies for treatment voluntarily more often

than the chronic. It should be added that this percentage is increased to quite an extent by cases of acute alcoholism, which show tendency to prompt recovery. On the whole, I believe the procedure is a success and worth retaining.

While voluntary admission may lead to earlier treatment in many instances, especially where the territory is largely rural, as at Watertown, it does not seem to be made use of to the same extent in larger cities. In addition to this fact, many patients who would seek treatment do not wish to enter state institutions. To meet this objection, it has been suggested that mental wards in general hospitals, or separate psychopathic hospitals be established. Patients could be brought to these hospitals without publicity and kept under observation and treatment. Commitment to state hospitals could be had in those cases in which it seemed desirable. This plan has met with numerous objections. One physician, discussing a paper on this proposition, said that he knew it could not be successful because he had taken a mental patient to a general hospital and the man had jumped from a window and broken his leg. I might reply by citing a case of an interne at a general hospital who fell ill with typhoid, jumped from a window while delirious and died soon afterward. That hospital still treats typhoid fever cases successfully. It should be understood, however, that mental cases cannot be cared for in the same wards that accommodate other cases. There must be especial equipment, similar to that used in the best equipped type of private sanitarium. That a mental ward can be operated in connection with a general hospital is shown by the experience of the general hospital at Albany. Nine years ago Pavilion "F" in that hospital was opened to mental cases. There have been received 2,156 patients during this time, and the managing board reports that it considers the plan a success. The Pavilion received no committed cases. A ward is maintained at Bellevue Hospital, New York City, for this purpose. As commendable features may be mentioned: many patients are brought in by nurses sent out from the hospital and commitment papers are made out by a resident alienist. I am told by physicians who have visited this institution that it is by no means adequate because of the large number of cases coming up for commitment in that city. Mental wards are maintained at St. Francis Hospital at Pittsburgh, and at the Boston City Hospital. The first state psychopathic hospital was established in connection with the University of Michigan in 1906. Patients are received for treatment and scientific investigation; clinics are held for medical students, and afford a valuable addition to the equipment of their graduates. In Canada, Dr. D. Campbell Meyers has agitated the matter of mental wards in general hospitals, and such provision was made by the Government in 1906 at the Toronto General Hospital. Similar wards are maintained in Munich and Berlin, largely for clinical purposes. Mr. Henry Maudsley of London has urged, without success, the establishment of an observation hospital for mental cases, to be devoted to the following purposes:

1. The early treatment of cases to prevent, when possible, commitment to an asylum.

2. Research work on causes and prevention of insanity.

3. Educational; a clinical school for instruction in diagnosis and treatment.

Dr. John Macpherson, Commissioner of Insanity in Scotland, said in 1907: "What we want are psychopathic wards apart from our asylums. We are once more in the thick of an argument about the institution of mental wards in the Royal Infirmary."

The experiment of having wards for mental cases in general hospitals is not new. We find this provision made by an act of Parliament in Paris in 1660. One hundred years ago beds were set apart for this purpose in the Pennsylvania General Hospital. I find no reference to the results achieved.

The arguments in favor of the mental ward may be summarized as follows:

1. It is hoped that cases would be brought to the hospital earlier.

2. Recovered cases would be spared the recollection of having been adjudged insane.

3. Cases could be kept under observation pending commitment, and the burden of state institutions could be lightened by avoiding the commitment of those cases that seem to show a tendency toward early recovery.

4. A dispensary could be operated to advantage in cooperation with social service workers.

5. Opportunities for the clinical study of psychiatry would be afforded hospital internes and medical students.

6. A high grade nursing staff ought to be assured by general hospitals.

7. The services of specialists in other fields of medicine would be available to the patients.

8. Mental cases developing in other wards could be cared for without being removed to a distance. This is an advantage when the patient happens to be critically ill.

In this paper I have endeavored to emphasize the need of bringing the public into closer relationship with the hospitals for mental diseases. By increasing the confidence of the public in the state's provision for the care of the insane, patients may be induced to enter the hospital at a time when the prospects for improvement under treatment are the most favorable. To this end I suggest the adoption of a simpler form of commitment — the free use of the voluntary commitment law where applicable — the establishment of mental wards or separate psychopathic hospitals to stand between the state hospitals and the people. Public education in regard to preventable causes of insanity and the proper care of mental patients should be pushed with the same enthusiasm that has produced such good results in regard to the prophylaxis of tuberculosis. The Illinois Society for Mental Hygiene should receive the necessary cooperation and financial aid to enable it to carry its work into all parts of the state.

OCCUPATION IN THE TREATMENT OF THE INSANE

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"In reviewing the slender and inadequate means that have been employed for ameliorating the condition of mad people, we are led further to lament the slower progress of humanity in its efforts to relieve them than any other class of the afflicted children of men." This was written about one hundred years ago by the first American psychiatrist, Benjamin Rush. At that time the insane were just beginning to be freed from the chains which had bound them. Pinel and Tuke, in France and England had inaugurated a new era, and among the hospital men at least, new ideas were being formed as to the care of the insane.

The earlier psychiatrists emphasized the physical basis of the disease and attempted to cure it by physical measures. Blood-letting, purging, emetics and feeding were the principal means of attack. A little later the moral, or mental side, received attention and the discipline of the individual by means of punishment or by means of promises was attempted. Occupation began to be considered as of value in teaching control of the self and as a means of restoring health.

Prichard, in 1837, reports several patients cured by means of occupation and exercise and quotes from a report of the Richmond Lunatic Asylum, which states that out of a total of 277 patients, 130 are actively and usefully employed, viz., 18 in garden labor, 16 in spinning, 12 in knitting, 18 at needle work, 12 in washing, 16 in carrying coals, whitewashing the wards, tailoring and weaving, and 12 in learning to read. This is a record that many modern institutions might envy.

Griesinger, in 1845, writes, "Of moral remedies, proper employment of the patient seems the most important. In healthy work, the innate desire of expressing and giving vent to its energies finds fullest satisfaction in the objective world; by constant occupation in forming materials, the thoughts and efforts engross the mind and withdraw it from empty longings and illusions of the imagination; the feeling of success again prepares the way for expansive sensations and therewith self-esteem and confidence return. Therefore, a steady employment of the patient, especially when voluntary, is rightly considered a decided indication of improvement and is frequently the commencement of recovery. Those employments are the best which keep the patient engaged in the open air, as all garden and field labor, which prove of great advantage not only to the lower ranks, who have been accustomed to daily toil, but also to the educated classes, owing to the peaceful and soothing influences of immediate intercourse with nature. In chronic cases the learning of a new and agreeable trade will sometimes engage the attention in a most agreeable way."

In recent years the subject of reeducation and the therapeutic uses of occupation have received especial notice, and in the reports of various institutions it is not unusual to find that from 50 to 70 per cent. of

patients are employed. But this does not mean, although at times it insinuates, that all the patients are employed for the therapeutic value of such employment. In every large state institution a greater part of the work on the farm, boiler houses, laundry and kitchens is done by patients largely with the primary aim of reducing the cost of maintenance, and only secondarily for the sake of the benefit which the patient will receive by being employed.

In the therapeutic use of occupation the underlying condition should be kept in view constantly and a continual effort made to correct the defects in the mental sphere which are so evident. Meyer speaks of dementia praecox, the patients suffering from which disease form the largest number of our chronic patients, in terms of disorganized habits. Judd speaks of insanity generally as a form of mental disorganization introduced in many cases by dissociation and settling into an abnormal reorganization. In patients who recover the associative activities return to the earlier normal state; in those in whom the condition is permanent the earlier forms of organization are not fully restored and a chronic dissociation results. But this state cannot be described in simple terms of dissociation, but rather in terms of dissociation with an abnormal association or integration following on the breaking down of the normal system.

From this view we can construct a theory of education which differs from that of the normal child in whom the experiences which result in ideas are being gathered for the first time. In the chronic insane the ideas are present, but are dissociated and the effort should be rather to train them to be associated in lines which are as nearly normal as possible. When one fully understands this principle the mode of attack must be studied with each individual. The dissociation is not the same in every patient and consequently the occupation or training suitable for one would not yield results with another.

La Moure, in New York, has shown what can be done with very demented, untidy patients with intelligent care and perseverance. He took a class of the most demented patients in the hospital and after much urging got them to form into line and march about the room; after a great deal of encouragment they were able to march, and next they were taught to sit in chairs in orderly rows and listen to an instructor. They were then taught to answer questions by writing which they would do even when they would refuse to talk. The instruction then led to dances and occupations with the hands, including basket weaving. Naturally, all this took a great deal of time, patience and tact, but the end-results amply repaid the instructor for all the trouble.

This method is valuable in training the very dilapidated patients, but in the less demented types other means must be used. Every hospital has a great number of fairly quiet and tidy patients who sit about the wards and do nothing. The idleness which affects these patients is due in a great part to the conditions of the hospital. The English speak of an asylum dementia which is caused by nothing more than the interminable dull routine which is not broken by hope, ambition or the ability to

create. This power of creation is inherent in every individual and all the natural instincts tend to force the individual into the creation of something new. When all hope is taken from one, the individual lapses into a dreadful inertia which increases with the years.

Many of these patients, after the acute disturbance at the beginning of the disease has passed, are willing and anxious to work if employment of an agreeable kind is given them. Many who will not work in the kitchen or bakery will do fancy work or light employment. They can easily be led into the habit of doing work which will keep them occupied for the greater part of the time. One must always keep in mind, however, that the employment given is one that will entertain as well as occupy. If the work becomes monotonous the tendency is always to drop it and in hospitals for the insane this is of too frequent occurrence.

Entertainments which the patients themselves arrange often lead to an interest in work which is not dropped at the conclusion of the diversion, but may lead into other channels. Dancing, and especially folk dancing, has been of great value in stimulating one type of the chronic patients.

In the practical application of occupation the improvement of the patients' condition should be the primary aim. The money which can be made by the sale of his creations and the money saved by his work should always be secondary. Too frequently, even where the therapeutic uses of occupation is most firmly urged, this is forgotten and the aim is rather to produce something which will sell rather than something which will occupy the patient and interest him. If the articles which are made have a pecuniary value and can be sold or used in the institution so much the better, but great care should be used in the sale of these articles not to inculcate in the patient the idea that he is turning out work for which he receives no recompense.

To aid the patient the physician should know what his condition is, how far he is disorganized and what occupation is suitable for him. For this is necessary physicians who have an insight into the mental disease and who can use the information which they have collected in their examinations. The instructor should be temperamentally a teacher and in sympathy with the effort to aid these patients. The instructor should be able to watch the patient, able to tell whether the occupation is of value to him, whether his interest is lagging, and if so, transfer him to other work.

In introducing therapeutic occupation into an institution one has to surmount many obstacles. The routine is to be disturbed a little and this is bitterly opposed by the hospitalized attendant. The resistance shown can be overcome, however, by the use of a little tact and firmness. It can be pointed out that the more the patients work the less trouble the attendants will have with them, the ward work will be easier and the routine will run more smoothly. In the patients who have been in the hospital for some years one meets with certain objections, which have to be overthrown. One patient says, "The work I do is sold for the benefit of the amusement fund. I never go to the entertainments and I object to

them on religious grounds." "My husband did not send me here to work, he sent me to be treated." "I didn't come here because I wanted to, and I am not going to work." These are samples which show what one meets. Some of them do take to work from the very weariness of their idle life, but this is not a motive to be relied on, for in other cases the love of idleness grows by indulgence, until all inclination to work disappears. To meet these objections one should point out that the way out of the asylum lies through their ability to take care of themselves, which can only be shown by their actions and their work. Rewards of various sorts are of great value. With the women a new dress or ribbon, a bit of candy, even the privilege of picking out cloth for a dress and having it made in the sewing-room, have been of great help. For the men an addition in the diet, an extra allowance of tobacco, quiet quarters have been used. In some of the English as well as in some American institutions the patient receives certain metal tallies which pass as currency in the institution store-room. They may be exchanged for tobacco, writing paper, candy, fruits, etc. Mercier recommends that the face value of the tallies be kept low so that a patient in a week could earn a number of them. He would probably value more a large number of them by which he could buy a larger variety of commodities, than a smaller number of the same aggregate value.

The time the treatment should begin and in what types it is most beneficial are rather important points. In the acutely disturbed, in the stuporous conditions and in the very depressed, retarded or agitated patients the field is limited. Some of the excited patients can work and do very well, but in the hypermanic conditions the mental state of the patient precludes any attempt at employment. As soon as the patient improves, however, to a point where his thought can be concentrated on what he is doing, occupation of some kind with exercise in the open air is especially valuable. In the convalescent states of practically all the psychoses occupation is indicated and aids the individual in returning to his normal condition.

In dementia praecox occupation is indicated as soon as the acute outburst has passed and before the inevitable mental deterioration is established. It should be at first fairly mechanical, but passing into more complex work as soon as the patient is able to perform the intricate employment. In this way, as soon as one habit is formed another is taken up and the individual's disorganized mentality is led to as nearly a normal state as is possible. It is to be kept in mind that habits do not develop in all their stages at a uniform rate and that a rapid improvement may be followed by a period of slow development which gives way to periods of rapid growth.

The occupation selected for an individual should be suited to his intellectual ability, his normal as well as to his present intellectual level. This may permit only of the most simple calisthenic exercises, dancing in groups, as in folk dancing, or only the most elementary routine work. In other cases the more complex basket weaving, rug weaving, embroidery, making paper flowers, etc., may be started at the onset.

The number of occupations from which one may choose is a large one and includes the kindergarten dances, marches, folk dances and games of various kinds. The employment varies according to the sex. For the women we have the tearing and sewing of carpet rags, hemming tea towels and window curtains, fancy work such as embroidery of varying degrees of complexity, stenciling, basket work, bead work, and even the more difficult employments, as painting china and book-binding.

For the men the simplest occupation is that of picking hair for mattresses. Then the varying degrees of farm and garden work, work in the shops or grounds. In one institution the men were formed into a carpentry class and repaired all the old furniture in the institution. They may be taught to paint and put to work painting the beds.

All of these forms of occupation may be made profitable, but the profit side should not be emphasized. It does not require a large outlay of capital to institute them, but it does require a great amount of time and careful supervision. Without this last one will see in a very short time that his class in occupation, which started off so enthusiastically, dwindles and fades. As one of my patients who had been instructing the other patients said, "They start off well, but the interest soon fades." The instructor will find that this failing interest is one of the most significant symptoms which arises, and to counteract it will require all her ability.

The objects which the patients make should be useful and at the same time as beautiful as possible. The instructor should endeavor to train the patients who oftentimes have only the most elementary ideas of color and designs, into discriminating between the beautiful and ugly. This will be of a distinct advantage when the patient leaves the hospital and will repay any effort made. It requires as much labor to make a basket in which there is a decided lack of harmony in the colors as it does one in which the colors blend, and if the objects are offered for sale, those which are pretty will bring a greater price even if the workmanship is not so good.

In concluding we may compare the objections to and the benefits derived from supervised occupation. The principal objections are: (1) Cost of material and instructors; (2) interruption of the routine; (3) the lack of benefits in the method. The first objection is easily overcome; the cost of the material which must be purchased is slight, and the sale of one article will pay for more than enough material for ten articles. One skilled instructor is required to supervise the groups, but the attendants and patients may be taught to aid in the teaching and good results achieved in that way. The second objection really has no foundation. In the majority of hospitals the routine is deadening, and anything which will break it should be hailed with delight. Some men hold that the only real exercise needed in the insane is rest. This is probably true in some acute conditions, but where the disease is wholly mental and the patient is physically sound for many years, this objection has no weight.

The benefits to be derived are: (1) The employment of a large number of patients, either as participants or spectators, in some occupation which causes them to be less introspective; (2) the breaking up of a day full of

monotony and from which all hope and ambition is removed into one which, for several hours at least, the individual has some real reason for existence; (3) the reeducation of patients and the training of habits which will permit them to go out into the world and lead a more or less self-sustaining life. If one chronic dementia praecox patient can be so trained that he is able to support himself outside a hospital the state is saved more than the salary of an instructor who may be able to teach others.

The therapeutic use of occupation is not a panacea. Not all the patients who are capable of being taught can be educated to a point where they can be self-sustaining, but if used rightly occupation will turn our large institutions into real hospitals and not large boarding houses where the insane are restrained. The idea has been gaining ground rapidly in the last few years, and in a short time we may say, to paraphrase Conolly, "lack of systematic occupation in an institution for the insane is synonymous with neglect."

DIFFUSE AND GENERAL PERITONITIS WITH A PLEA FOR EARLY DIAGNOSIS *

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Professional men of all types when selecting a subject for a scientific thesis are unconsciously prone to choose one full of victories, but I assure you that feature did not prompt me to select general peritonitis as the subject of this paper this evening. Indeed, I am regretfully conscious of my failures in dealing with this malady.

While I have little hope of calling your attention to anything new on this subject, yet it is of such grave importance to every general practitioner, as well as surgeon, that it cannot be too often considered.

Unfortunately, the terms *Diffuse* and *General Peritonitis* have given rise to considerable discussion as to their exact contra-distinctions. Some writers consider the terms of identical meaning, as regards extent of inflammation; others consider spreading and diffuse as synonymous, while others insist that, when the cecum, appendix and three feet of ileum are involved, it should be considered diffused; more extensive than this, general peritonitis. But from an anatomical standpoint I would favor the terms free peritonitis, and circumscribed peritonitis, referring to the encapsulated form as circumscribed, regardless of the size; but the terms are more or less arbitrary. The more one sees of intra-abdominal pathology the greater becomes his reverence and affection for the diagnostic ability of the able practitioner.

I once heard Dr. J. B. Murphy, of Chicago, say to an intimate friend-doctor: "As much as I love you, and as much as I appreciate your business, if you are to continue procrastinating in this class of cases, I want

*Read before the Peoria City Medical Society.

you to send them to the other fellow." However, the profession should be charitable to one another until they become nearer a unit as to the time and manner of treating this disease.

The young surgeon's reputation is quite dependent on the diagnostic ability of his medical friend. He knows almost intuitively when called to certain neighborhoods just about whose services are most needed, his own or the undertaker, and too often the wrong man is called. It is not my desire to criticize any member of the profession; none of us are infallible, but I do unhesitatingly make an earnest plea for early diagnosis in this class of cases. Has any one ever lost a case of peritonitis from too early an operation? The answer is necessarily in the negative. This suggests another question, do we ever operate too late in peritonitis? The answer, of course, is a sad one. The next logical question that confronts us, is there a *safe time* between the early and late hour for operation? Right here is where the surgical profession is hopelessly divided. Any number of surgeons would be in one accord on first hour operative interference, when seeing a patient in a beginning attack of peritonitis, but this same number of operators on seeing the same patient on the third, fourth or fifth day of an attack of appendicitis (our most dangerous and common source of peritonitis) would be divided in their opinion as to operative procedure. So we have third day operators, fourth day operators, fifth and sixth day operators. Can you blame the medical man for late cases and high mortalities?

The late Joseph Price, of Philadelphia, to my mind the surgical wizard of his time, in dealing with abdominal infections said: "It is useless to discuss operative procedures until we have established some unity of opinion as to when to operate in peritonitis." His dogma always was, "Operate the first hour at any stage." He further states that "when you begin to make differential discussions as to the time to operate on various types of peritonitis, as to whether your infection came from a ruptured appendix, suppurative gall-bladder or a pyosalpinx; on account of some forms of inflammation being more virulent than others, you confuse the general profession and yourself as well, but if you possess such knowledge, keep it to yourself. The information is not safe even in your own head."

You have no right to assure the patient or counsel, or ever assume yourself that on certain days you will find a definite pathologic picture. You cannot promise that there will be a fifth or sixth day, neither can you promise a stage of quiescence.

Murphy says, "The day has passed for applying a hot water bottle to the belly and giving the appendix an absent treatment."

If hope and Christian science must enter your professional career, do not mix them with peritonitis, they are incompatible.

I do not mean to infer that there is not a quiescent stage in some cases of peritonitis, but you have no right to anticipate pathologic rest in general peritonitis when the true condition can only be revealed by opening the abdomen.

You are called in consultation during an acute attack of peritonitis, you refuse to operate during the acute symptoms, but promise the patient and family physician to operate if the patient gets well; in other words, if that hoped-for stage of quiescence intervenes before death, you will operate. Any surgeon who procrastinates under these circumstances and death occurs, such death should be figured in his mortality statistics, and if this is not done the operator is picking his cases.

Dr. Price says, "The fire department should teach us our duty in peritonitis," and the responsibility of the case must be placed on some one member of the profession, as divided responsibility breeds neglect. So often a physician will see a case of peritonitis, make the diagnosis and advise surgical intervention. The patient, the relatives, or both, will object to an operation, and the physician in charge will continue to treat the case along medical lines of which he does not approve, with the idea that he has unburdened his conscience by simply advising surgical interference. His attentions should end when his advice is not taken. If we all did this, how much earlier we would get these cases and how our mortality would be decreased.

Early lesions in the abdomen other than traumatic, begin in the mucous membrane, and inflammation of serous membrane is usually due to neglected lesions of mucous membrane. Another plea for early diagnosis and operative interference.

How often we are consulted by patients relating that typical picture of chronic catarrhal appendicitis, namely, localized pains, loss of weight, bad color, chronic indigestion, etc., etc., due to absorption of toxins from a very small area of mucous membrane which has undergone a mild form of inflammation and macroscopically shows but little pathology, but how amazing the benefits derived from its removal. What a God-send it would be to mankind if the profession, as well as laymen, were taught that all cases of appendicitis were fatal unless operated on. We would then be dealing with very small lesions instead of general peritonitis and saving practically all our cases.

I do not wish to burden you with the statistics of different operators, and my own experience has been limited to so few cases, that I would not consider a résumé convincing.

While attending the Surgical Congress in Philadelphia a year ago last November, I had the good fortune to meet the worthy successor of Dr. Price, Dr. J. W. Kennedy, who was Dr. Price's first assistant for ten years, and since his death has carried on his work in his private hospital. I told Dr. Kennedy that I was very desirous of seeing the so-called complete abdominal toilet as executed by his predecessor. The following Sunday morning Dr. Kennedy telephoned me at the hotel that he would operate on an abdominal pus case that morning. The case proved to be a ruptured pyosalpinx. He opened the abdomen in the median line and removed both tubes in a sea of pus, irrigated every crevice of the abdomen with normal salt solution by means of the Price irrigating tube after this fashion: He inserted a cofferdam drain, which truly was a drain, and consisted of four or five thicknesses of gauze

18 inches long, inserted into the true pelvis with a dressing forcep, while the intestines were held back with the other hand. He used no suture in closing the abdominal incision, as that was completely closed by his protruding cofferdam drain.

The following Tuesday morning I witnessed him dress the case, and I never before appreciated what draining a pelvis really meant. I neglected to mention that all abdominal cases were placed in the Fowler position before and after operation.

Notwithstanding my enthusiasm over the principles involved in this procedure, I have not felt that I was justified in adapting them, owing possibly to lack of training in using this radical but scientific technic. I preferred to add to my surgical reputation in selecting a less hazardous class of cases.

I have attempted in the majority of my own cases to exemplify the more conservative and widely accepted procedure, operate at earliest possible hour, get in and get out quickly, as Robert Morris "put it," *"run while the pus runs."* Large gauze drain always inserted at the seat of trouble, remove the appendix if easily accessible, Fowler position before and after operation, normal salt solution, proctoclysis, et cetera.

Some of my cases have gotten well and I think most of them will, following this method of treatment, that is if Nature has been kind to the patient, and we have to deal with circumscribed peritonitis, but in the absence of that divine wall our patients will continue to die under puncture surgery.

PREVENTIVE MEDICINE*

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The doctor's opportunity to protect the public, or more correctly, the science of preventive medicine, had its real beginning a little more than a century ago, but has had its most rapid growth and reached its great development during the past three decades. It existed, however, in an extremely limited way for several centuries. One of the very first preventive measures known was the practice of inoculation as a method of protection against the fearful scourge of former times, variola or smallpox. We can scarcely form any conception now of the frightful epidemics of this loathsome disease, which swept through both heathen and civilized nations during the middle ages. It has existed from the earliest antiquity in Asia and Africa, and in the thirteenth, fourteenth and fifteenth centuries invaded practically all of Europe, and early in the sixteenth century came to America. In Europe alone it destroyed nearly half a million lives annually, and when the Spaniards brought it to Mexico in 1520, it caused fully three and one-half million deaths in its pestilential

* Read in part to Waukegan Congregational Brotherhood, Dec. 1, 1912, and to Lake County Medical Society, Jan. 9, 1913.

march. Almost all who survived were horribly and permanently disfigured. It is no wonder than that any means of protection was gladly welcomed and a form of inoculation, which had been practiced in China and other Asiatic countries for centuries, was first introduced into England early in the eighteenth century by the wife of an English ambassador to Turkey, after which time and until vaccination was known, this method of inoculation, introducing pus directly from a small-pox pustule under the skin of the person to be protected, was extensively practiced throughout Great Britain. The objections to this method were that while it usually produced a mild form of the disease, a kind of varioloid, it occasionally proved fatal and in all cases being genuine small-pox, although mild, it simply helped to spread the disease and make it much more prevalent.

It was in 1798 that the first real advance in preventive medicine was made, when Edward Jenner, a physician of Gloucester, England, published a paper, making known to the world the value of vaccination. After the publication of his paper he was ridiculed and abused by the profession, but through his persistence was finally allowed to practice his method of vaccination in the wards of a hospital and in a few years it obtained favor and was generally practiced in England, France and America. Later, it fell into disrepute for a time, owing to the fact that certain persons who had been vaccinated contracted the disease a number of years later, it not being known then that revaccination was necessary from time to time.

Vaccination has practically eliminated small-pox from civilized countries and if it were more generally practiced, would utterly remove this foul disease. Vaccination, in spite of all the objection and opposition of so-called anti-vaccinationists and other ignorant and prejudiced people, is absolutely harmless when properly done. Almost all troubles, which are very rare, arise from the simple operation being done by a careless or dirty physician (so-called) or from meddling with the sore or dressing by an ignorant, dirty or refractory patient. Such troubles are simply infections with pus germs and have nothing to do with the vaccine lymph, which is aseptically prepared with every precaution against all germs. In Germany, vaccination is compulsory in infancy and small-pox is unknown. Here it is usually not done until the child goes to school, unless there is a small-pox scare; but it would be wiser for all children to be vaccinated when a year or two old, to guard against possible exposure to a mild case of small-pox or varioloid on the train or trolley car, as it is possible to meet such a case in or near a large city at any time, for in the slums or poor districts, largely occupied by ignorant foreigners, small-pox is probably present somewhere almost, if not all the time. Revaccination should also be tried at least every seven years and more often if there is reason to fear exposure to the disease.

Having devoted so much time to this contagious disease, I shall speak very briefly of some of those pestilential scourges which are known to most physicians of this part of the country only by description, but which

cause untold sorrow and suffering and many thousands of deaths annually in those parts of the world where they carry on their destructive work and where preventive measures are either little understood or carelessly and inefficiently employed. Two of these Oriental scourges, Asiatic cholera and the bubonic plague, would enter our ports at almost any time and destroy hundreds if not thousands of lives if it were not for the most stringent quarantine regulations combined with most careful medical examinations and protective measures constantly enforced. In former days before the nature of these diseases, their causes, modes of dissemination and methods of prevention were well understood, our nation had some very bitter experiences, especially with cholera, malarial fever and yellow fever, and in some parts of the south these destructive but preventable fevers still cause many deaths and much suffering.

Asiatic or epidemic cholera, has had its home in India for centuries, but not before the past century was it widely known in Europe and America. Epidemics occurred in Europe every decade from 1830 to 1900, and in America during the first half of this period, but only a few small groups of cases have occurred in our country since 1873. The disease is characterized chiefly by sudden and violent profuse vomitings and purgings rapidly repeated, accompanied by painful cramps in the limbs and almost intolerable thirst and extremely rapid emaciation, due to the profuse loss of fluids. The mortality is very high, varying in different epidemics from 20 to 80 per cent. of all cases, and death may occur within a few hours and in the worst form of cases in a much shorter time. The duration is usually, however, several days. The cause is absolutely known to be a germ known as the cholera or comma bacillus, its form resembling a comma. The entrance of these bacilli into the alimentary tract in food or drink produces the disease, and prevention consists in absolute cleanliness of hands, food and drink, avoiding alcoholics and all uncooked foods, especially fruits, and the thorough disinfection of the matter vomited and passed from the bowels as well as of the receptacles for them, and the clothing, bedding and body of the patient and anything touched by him. At our ports of entry, every case, where there is the slightest suspicion of danger, or coming from a country where the disease has been reported, is quarantined and kept under medical supervision until all danger is passed. Protective serum has been used with great success in India, where cholera is always present.

The plague, also called bubonic plague, is also an Oriental disease, with India and China as its chief abodes. During the fourteenth century it spread over most of Europe, being known as the Black Death, and in London, in 1665, it destroyed more than 70,000 lives. During the past twenty years it has been more or less active and has appeared in various European ports and also in New York and among the Chinese in San Francisco. The disease begins with a severe chill followed by high fever, accompanied by delirium or stupor, extreme weakness and the rapid and general development of buboes whence its name bubonic plague, these buboes being inflamed swellings of the lymph glands in the groins, arm-

pits and other parts of the body. In the worst cases there may be hemorrhages from the lungs, stomach, bowels and beneath the skin, and pneumonia is frequent. The death-rate is extremely high, ranging from 40 to 80 or even 90 per cent. in different epidemics. Fatal cases end usually in three to five days. Cases that recover are sick several weeks or months, as the buboes heal very slowly. In treatment an anti-plague serum has saved many lives. The cause of the disease is a germ, a short bacillus with rounded ends. Like the germs of several other contagious diseases, of which I shall speak, this germ has a special insect which acts as its host and carrier, by means of which the disease is disseminated in almost all, if not all, cases. The host and carrier of the plague bacillus is the rat-flea, or the flea which is the almost constant companion of the rat, especially the ship and wharf-rats, which infest all ports and vessels and hence carry the disease from one country to another, unless every precaution is taken to prevent these vermin from gaining access to the vessel in infected ports and to carry on a constant and wholesale destruction of them in all ports of entry and these measures our quarantine boards carry out most thoroughly. If the flea would stick to the rat there would be no trouble, but unfortunately it will leave him for human company at almost every opportunity and the bacillus leaves the flea and enters the body either by the alimentary or respiratory tract and begins its deadly work.

Malarial fever, which in its milder and more common forms is known as intermittent fever, chills and fever, or fever and ague, and in its severe forms as remittent fever and pernicious malarial fever, is one of the oldest and best known diseases, prevalent in most marshy or swampy regions and in former times being constantly present in Rome, the Pontine marshes near it and the swamps along the lower Danube and still prevalent in some of the lowlands of our southern states. The reason for its infesting such regions is clear when we understand the cause. I will not take time to describe symptoms, as the various names given tell its most characteristic ones, viz., recurring attacks of chills, fever and usually profuse sweats at regular intervals of usually one, two or three days, and progressive pallor and weakness. All the milder forms recover under proper treatment, usually quinin in sufficient doses, but the severer forms may result fatally sometimes in spite of treatment, the mortality rate in the pernicious forms exceeding 20 per cent. Malarial fever is due to a parasite or ameba, called the plasmodium malariae, which varies considerably in appearance in different forms and stages of the disease, but always invades the blood and causes more or less rapid destruction of the red blood-corpuscles. This parasite always undergoes a preliminary stage of development in a certain kind of mosquito known as the anopheles, which transmits the parasite and the disease to its victim during its pleasant little operation of boring and sucking blood. Protection against the disease then consists in the use of mosquito-proof screens for all windows and doors in malarial regions and the draining of their breeding places in all swampy land and the free use of petroleum or kerosene on all places, even puddles and rain barrels where they may

breed, thus destroying them in the larval stage when known as "wigglers." With these measures malarial fever has been largely exterminated.

Yellow fever has been and still is one of the most dreaded and fatal diseases of tropical and subtropical regions, especially the Atlantic coast of Africa and South America, the West Indies and the coast regions chiefly of Central America, Mexico and the Gulf States. The symptoms are chiefly a sudden chill, followed by high fever, accompanied by headache, pains in loins and limbs, restlessness and mental disturbance, sometimes delirium. In severe and fatal cases these symptoms are soon followed by hemorrhages into the stomach and bowels, causing "black vomit" and tarry stools, great weakness and the skin becomes yellow or bronzed, giving the disease its name. Hemorrhages from the nose and other parts of the body and also under the skin may occur. The duration of the disease is usually about a week, but in cases that recover, convalescence is very slow, and may have relapses. The death-rate varies greatly in different epidemics, some being very mild, while in others almost all cases are fatal. Usually mild epidemics give a mortality of 5 to 10 per cent., while in severe ones the death-rate ranges from 30 to 50 per cent. The cause of the disease is a germ—also a microscopic rod or bacillus called the bacillus icteroides from the icteric or jaundiced color of the skin. This also has as its host or carrier a certain mosquito, known as the stegomyia, which also transmits the bacillus and the disease to its victims in the same agreeable way that the anopheles transmits the plasmodium of malarial fever. Without the able assistance of this particular form of mosquito it is impossible to contract yellow fever. As long as the insect is excluded by screens from the dwellings and prevented from presenting his bill at all other times, one could sleep in the same bed with a yellow fever patient, use the same dishes, towel and handkerchief if he chose and be absolutely free from danger, and the same is true regarding a patient with any form of malarial fever living in the midst of a swamp.

Leprosy has been variously described in the Bible and other literature since the earliest times, and exists in all parts of the world, being endemic or constantly present in China, the number of those affected being estimated at 2,000,000, and in India at 200,000, and to a much smaller extent in Japan and the Philippines, Arabia, Persia, Africa, South and Central America, Mexico, Australia, New Zealand and other islands of the Pacific and Indian oceans and in the northern parts of Europe, Canada and parts of our own country, especially California and Louisiana. Its cause was discovered in 1878 to be a germ resembling that of tuberculosis and called the *Bacillus leprae*. I shall not take time to describe the disease, except to say that it is very chronic, lasting for years and producing a gradual ulceration and destruction of certain parts of the body, especially the face, ears, hands and forearms, feet and legs and the nerve trunks generally. It is not nearly so contagious or so fatal as Scriptural accounts would lead one to believe, the contagion being very slowly acquired and many patients recovering from the disease either with or without treatment. The sanitary or protective treatment, con-

sisting in segregation of those diseased, has been practiced since Biblical times, and in Japan, the Hawaiian Islands, Philippines, India, Norway and among some of the British, Danish and Dutch possessions, colonization has been practiced, and a high degree of humanitarian direction been obtained, but in many countries the care of lepers depends solely on charity and religious devotion. Many remedies, including electricity, *x*-rays and various serums, have been used in treatment with varying results, but every year more cases of leprosy are reported as cured, the disease is no longer neglected and the hope of a specific remedy is steadily growing.

Uncinariasis, or hook-worm disease, is one of the most wide-spread of parasitic diseases, being found in Asia, Australia, Egypt, most countries in Europe, South America, the West Indies and most of the southern states, and occasionally cases are found in the northern states in persons returning from the south, the West Indies or Italy. This disease may be regarded as the oldest of which we have any written record, for in the Ebers papyrus, an Egyptian medical treatise, written on parchment and dating several thousand years B. C., a disease is mentioned which corresponds closely with uncinariasis. The disease has received a great variety of names, a few of them being brick-maker's or miner's anemia, dirt-eating, negroes' consumption and perhaps most common is the unjust term, lazy sickness, which has been given to it among the so-called "poor white trash" of Virginia and the Carolinas. It is most prevalent in rural districts where hygienic conditions are bad, also in coal and tin mines, brick and tile works and in all places where warmth and moisture, combined with filthy habits of defecation (so-called soil-pollution), favor the spreading and development of the hookworms and their larvae, which enter the body of the victim mainly through the skin of the feet, but occasionally are conveyed by dirty hands to the food and drink and reaching the upper part of the intestinal tract either by swallowing or indirectly through the circulation, they develop and multiply there and suck the victim's blood until he becomes profoundly anemic and weak and many cases end fatally. How common and serious the disease is can be judged from the statement of the Porto Rican Commission, that in 1899, 90 per cent. of the peasant population of the island were suffering from this disease, and it is estimated that in the United States 2,000,000 persons are infected. Prevention can only come through the education of the affected classes, teaching them the danger of soil pollution, the importance of wearing shoes, of keeping hands, dishes and food clean, and the significance of so-called ground-itch as the first sign of infection and the discovery and proper treatment by intestinal antiseptics and general tonic measures of all infected cases. The splendid work of the Porto Rican Commission and the more recent Rockefeller Commission for the study of Hookworm Disease will help greatly without doubt in the education of the people and the elimination of this widely prevalent disease.

I would like to say something about other great epidemic diseases found in different parts of the world and causing thousands of deaths,

such as beriberi, occurring in Japan and also in many tropical and subtropical regions of Asia, Africa, Australia and America, accompanied by severe inflammation of many nerves, often resulting fatally and leaving those surviving with extensive paralyses; the cause of the disease being still unknown, but believed by many to be due to the eating of improperly prepared rice or certain kinds of fish; also trypanosomiasis, the sleeping sickness, which is due to a parasite transmitted by the bite of the tsetse fly, causing several months of increasing lethargy, accompanied by fever, wasting and other symptoms and ending invariably in death. It seems to be confined to tropical Africa, especially along the lakes and rivers, and causes great mortality among the natives. Many remedies have been tried, but without success, and prevention is all important by avoiding in every way possible the bite of the fly and the isolation of those infected.

Also the Rocky Mountain fever, or spotted fever, occurring in Idaho, Wyoming, Nevada, Oregon and especially in the Bitter Root Valley of Montana, conveyed by the bite of a tick, running its course in from one to three or four weeks with chill, fever, much soreness and aching in the bones, a spotted reddish rash and having a very high mortality, the average being about 70 per cent. in the Bitter Root Valley. Treatment is purely symptomatic and prevention is most important, consisting in avoiding very carefully its host and carrier, the infected tick. I might speak of others much nearer home and receiving much attention at present, such as pellagra, epidemic cerebrospinal meningitis and poliomyelitis causing spinal paralysis, but time will not permit.

I will now take up briefly the familiar diseases, typhoid fever, diphtheria, scarlatina, pneumonia and last but by no means least important, tuberculosis.

Typhoid fever has been known ever since the days of the Greek physician, Hippocrates. It was, however, confused with true typhus fever and other infections and was first described as a separate disease in 1837. The cause of the disease is a germ known as the *Bacillus typhosus*, first seen and described in 1880. It enters the body either in infected drink or food, usually water containing sewage with urine or fecal matter from other patients with the disease, or carried by flies from such matter in privy vaults or thrown out on the ground and deposited by the flies while making their toilet on the bread, butter or other articles on the table, or while taking a bath and swim in the milk or coffee. These are the most usual ways, but there are others, such as the use of milk from careless or ignorant farmers or dairymen, having typhoid fever in their own homes and washing the milk-cans or bottles with infected water or dirty hands soiled by the patient's discharges, or by careless and dirty nurses infecting their own food or drink with hands thus soiled and not properly cleansed and disinfected. There is no typhoid fever without the entrance of the bacillus, and this is probably never inhaled, but always carried to the mouth in one of these ways. Many of them are undoubtedly destroyed by the healthy gastric and intestinal digestive fluids, especially the bile, but in weaker subjects, or where taken in great quantities, many survive, and reaching the lower part of the small bowel, begin their destructive

work and soon invade the blood and other organs; but if the discharges from the bowels and urinary bladder are promptly and thoroughly disinfected and the hands of the nurse and also all soiled bed clothing and the hands of those who gather and wash it also disinfected, there is absolutely no danger of the patient transmitting the disease to others. These precautions ought to be taken in every case for the safety of the attendants and relatives as well as others, but unfortunately they are often either neglected or carelessly done and so the disease continues to spread. The sewage of all cities and towns, especially those beside lakes and rivers, should be disposed of in settling tanks or some other way than by emptying it into the source of water-supply, no matter how large it may be, and if the water is so contaminated, it should either be treated by efficient sand filters and hypochlorite of lime or a Pasteur filter used in the home, or water boiled for at least half an hour if there is any doubt about its purity, and also a systematic campaign of destruction should be carried on against the pestiferous fly and all his breeding places in garbage piles, manure heaps and every dirty barn, stable, privy vault, back-yard and alley, offensive both to sight and smell. If these things could be properly done everywhere, typhoid fever would almost immediately vanish from the earth. It is an absolutely preventable disease and that it prevails so extensively and causes thousands of needless deaths annually is a disgrace to civilization. The compulsory use of antityphoid serum in the army and navy and its increasing use in hospitals and private practice will greatly help in reducing sickness and mortality from this cause.

Diphtheria is also one of the historic foes of humanity, especially of childhood, being known in the time of Hippocrates, and the first tracheotomy or opening of the windpipe on account of this disease is said to have been done by Asclepiades, a Greek physician, one hundred years before Christ. The name diphtheria means membrane and was first given to the disease in 1821. True diphtheria, for there are so-called pseudo or false diphtherias, is caused by a germ named from the two men who first described it and proved it to be the cause of the disease, the Klebs-Löffler bacillus. Like all germs, it is microscopic in size, and must be specially stained in order to be seen. It is rod-shaped, from 1 to 2/25,000 of an inch in length, presents some variations in form, but the grouping of these rods is especially characteristic, being arranged in lines much like Chinese letters, but at various angles. It gains access to the nose or throat, where it begins its mischievous work by being inhaled or having a bit of the membrane coughed directly in, as happens occasionally to the physician, nurse or mother while examining the patient or giving medicine or nourishment. The majority of adults and a fair proportion of children seem to be very slightly if at all susceptible to the disease, and some adults may carry the bacilli in their throats for weeks or months without harm to themselves, but with great danger to their susceptible children or the children of their relatives and friends. Such persons are known as diphtheria carriers, and when made aware of their condition,

should use antiseptic gargles and sprays frequently and take every precaution to avoid infecting others.

This is one of the strongest reasons why promiscuous kissing, especially of children by adults, should be discouraged and quite properly prevented if possible by the parents or guardians of the children. Other and even more serious diseases, especially venereal diseases, are easily transmitted in this way to the innocent victim and the health, if not the life, destroyed. It is needless to add that these infections can also readily be transmitted by the common use of handkerchiefs, napkins, towels, toothbrushes, etc., and the unselfish but unwise sharing of apples or other fruit, candy, chewing gum and plug tobacco. In these ways at least, it is altogether best to avoid economy, generosity and socialism. Diphtheria has largely ceased to be one of the most dreaded diseases of childhood through the general use of one of the most valuable discoveries of preventive medicine—diphtheria antitoxin. By the prompt use of this remedy in sufficient doses and repeated as indicated, almost if not every case can be saved, but each day's delay in its use makes the mortality much higher and after the fourth day from the appearance of the membrane it is almost useless to expect much if any benefit from it. All those exposed, especially the children, should also receive immunizing or protective doses, thereby preventing any extension of the disease to them. By these measures, not only has the mortality of the disease been wonderfully reduced, but its prevalence has also been very greatly limited.

Scarlatina, or scarlet fever, has probably also existed since the earliest times, but was first described in 1660, and first noticed in America in 1735. The cause of the disease has not yet been fully established, but is doubtless a specific germ, probably of the variety known as streptococcus, of which there are various kinds, consisting of round cocci, like berries, arranged in long chains. The disease is found in all parts of the world, but seems most prevalent in Europe and North America. It occurs by far the most frequently in children between the ages of 2 and 10, but no age is exempt and social position has little influence. Epidemics are most frequent and severe in autumn and winter, but may occur at any time. While quite contagious, it is far less so than measles and when several children in a home are exposed to it, one or two may take it and the others escape. The patient should, however, always be promptly isolated and every precaution taken to avoid its spread. This is especially important, as we have not yet any specific antitoxin for it as we have for diphtheria, and it is such a treacherous disease, the cases apparently the mildest sometimes ending fatally, and so many unfortunate sequels or after-effects being liable to occur that no effort should be spared to prevent the infection of others. The children of a family in which a case develops should not be allowed to attend school or associate with other children. In small towns and country places the closing of schools during the prevalence of the disease is to be recommended, but in cities, especially large ones, this is of doubtful utility. It is best in choosing a nurse or attendant to get one if possible who has had the disease and so is immune. The physician should, of course, take every precaution to avoid

carrying the disease to others, although many believe that it can only be acquired by direct exposure to the disease and the danger of carrying is doubtless far less than is generally believed. Isolation of the patient should be as complete as possible and the less there is left in the room of rugs, clothing, upholstery, pictures, etc., the easier and more efficient will be the disinfection of the room after the patient's recovery or death and removal from the room. Disinfection is, of course, by formaldehyd gas, the room being tightly closed for at least six hours, then thoroughly aired. All bed linen and clothing during the course of the disease should be soaked for several hours in antiseptic solution before being sent to the laundry. All discharges from nose, throat, ears, suppurating glands, bladder and bowels should also be disinfected and the patient should not be allowed to leave quarantine until all scaling of skin has ceased as well as all discharges from nose, ears and glands and all signs of inflammation in throat have disappeared. He should then have a complete bath with soap and warm water, special attention being given to hair and ears and this followed by sponging with weak antiseptic solution and then complete change of clothing in another room. Other minor details also need attention, but I will not take more time. In case of death, the body should be wrapped in a sheet soaked in strong antiseptic solution, placed in a tight coffin, which must not again be opened, and funeral should be strictly private. The same rules as regards isolation, bath and change of clothing, disinfection of room and care of body in case of death should be followed in diphtheria and other contagious and dangerous diseases. Scarlet fever is considered by many the most to be dreaded of all infectious diseases which now prevail. It has been estimated to cause 4 to 5 per cent. of all deaths in England and America. The mortality is especially high if complicated with diphtheria.

Pneumonia is sometimes spoken of as the "Captain of the men of death," but it still ranks second to the greatest destroyer of human life, tuberculosis, although at certain seasons and especially in epidemics, it causes even more deaths than the great white plague. Pneumonia constitutes 3 to 4 per cent. of all diseases and causes about 8 per cent. of all deaths, while tuberculosis constitutes about 5 per cent. of all diseases and formerly caused from 10 to 14 per cent. of all deaths, but on account of the campaign of education and the constant warfare against the grim destroyer, it probably does not at present have a death-rate much if any higher than that of pneumonia. About one death in every six is due to one of these two diseases. True pneumonia is called croupous, or lobar pneumonia, to distinguish it from another form of lung inflammation occurring mostly in children and called catarrhal, or lobular pneumonia, but it is not simply a disease of the lungs but is a general infectious disease with inflammation of the lungs as its most marked condition and causing the chief symptoms. The cause of true or lobar pneumonia is a germ called the *Pneumococcus*, or *Diplococcus pneumoniae*, diplococcus meaning double coccus or berry, as this germ is always found in pairs enclosed in a capsule. That pneumonia is not only a contagious, but is also a general disease, is proven by the fact that the pneumococcus is

not confined to the lungs, but is abundantly present throughout the blood and may invade any organ of the body and is apt to invade the meninges or coverings of the brain or spinal cord and cause meningitis. Pneumonia may occur at any age, but over half the cases occur between the ages of 20 and 40. It is most fatal to the very young and the aged and many deaths which are ascribed to old age are really due to pneumonia, which runs a much quieter but a rapidly fatal course in most old people. Among those in young adult life or middle age it is far more fatal to heavy and even to moderate drinkers than to those who seldom or never use alcoholics. A correct diagnosis of pneumonia in a drunkard is almost equivalent to a death certificate, and in an epidemic drinkers are most frequently and fatally attacked. Almost every medicine has been tried in pneumonia with dubious or discouraging results. The outcome depends almost entirely on four things: prompt and correct diagnosis of the disease, its extent and complications; good nursing with all that that implies; the virulence of the pneumococcus which varies greatly in different epidemics and the vitality or resisting power of the patient's system. Medicines are doubtless valuable to relieve pain, to obtain rest, in certain crises, and for the treatment of complications, but they have very little effect on the course of the disease; and plenty of nourishment which is assimilated, plenty of water internally, plenty of fresh air and proper bathing are of far more value than drugs in this disease. In the way of preventive measures, the patient should be isolated and as the pneumococcus is found in the matter expectorated and the disease doubtless communicated by this matter being disseminated in the air and inhaled, all discharges from mouth and nose should be received either in a vessel containing antiseptic solution or on rags which are immediately burned. It will probably be best also to disinfect the excretions from bowels and bladder. After convalescence or death the rooms should be thoroughly disinfected. Nurses and attendants on the patient should be given plenty of rest, sleep and fresh air to increase their resisting power. Weak and elderly persons should, if financially able, spend winters and early springs in the south, as pneumonia is most prevalent at those times.

Tuberculosis may affect any organ of the body, but in its most common form affecting the lungs is known as pulmonary tuberculosis, phthisis, or usually consumption. It is also one of the oldest known diseases, the term phthisis meaning wasting, being first used by Hippocrates, the so-called Father of Medicine. The small diseased nodule or tubercle which is characteristic of the disease wherever found was first described by Sylvius about 1650. It was long believed to be contagious, but this was not absolutely proven by experiments on animals until 1865. The absolute cause of the disease, the germ which produces the tubercle by its action on the healthy tissues, the *Bacillus tuberculosis*, was discovered by Robert Koch in 1882, and most of our real knowledge of the disease dates from that great discovery. This bacillus is a narrow microscopic rod varying in length from about 1/20,000 to 1/6,000 of an inch and usually slightly bent or curved. Like all germs, it must be stained in order to be seen.

Tuberculosis, as already stated, is the greatest foe of humanity. It formerly caused about one-seventh of all deaths and one-third of all those between 15 and 45 years of age, the most active and productive period of life. It has caused more deaths than war, famine, cholera, plague, smallpox and yellow fever combined. About 5,000,000 persons die annually from the great white plague, about a million of these in Europe and 150,000 in the United States. In Germany in 1894, tuberculosis caused 7,000 more deaths than croup, diphtheria, scarlet fever, measles, whooping cough and typhoid fever combined. In Austria, the general death-rate from tuberculosis is 11 per cent., and the hospital death-rate is 25 per cent., the patients coming mostly from the poorer classes. These figures give us a little idea of what a fearful destroyer of life this almost universally present disease is, and yet we know from the discoveries of medical science that it is absolutely preventable if the proper methods are employed. It has been positively proven that the disease is not inherited and the belief is growing stronger that the children of consumptives, instead of being predisposed to the disease, are rather more resistent to it than the children of healthy parents. The children of tuberculous parents do not inherit the disease, but acquire it by constantly breathing the air contaminated by the infected breath and expectorations of their diseased parent or parents. Husband acquires the disease from wife and *vice versa* in the same way. If the children of tuberculous parents are early removed from the infected home and placed in healthy surroundings, they will grow up just as strong and healthy as the children of the healthiest parents, and if the children of healthy parents are allowed to associate much with consumptives, they will almost certainly acquire the disease. The three great principles of treatment are fresh air all the time, night and day, winter and summer, practically constant out-door life, plenty of digestible, nourishing and assimilable food, largely fresh eggs and pure milk, and abundant rest, with carefully graduated exercise, always under the careful supervision of a specialist in tuberculosis and the nurses who work under his direction. I emphasize the matter of treatment being under the supervision of a tuberculosis specialist because the average physician does not understand the treacherous nature of this disease and often makes serious and sometimes fatal mistakes in giving advice to these unfortunate cases. One of the most common mistakes is to advise treatment at home, "stay out of doors and take lots of good nourishing food," and the other mistake, perhaps even worse at least for the patient, is to advise going to Florida, Colorado, New Mexico, or some other warm climate, as though change of climate and plenty of sunshine had some miraculous healing power, whereas the fact is that the climate of Illinois is just exactly as good for these cases as any other, and many of them improve more rapidly in winter than in summer. It is constant out-door life that is needed, not change of climate or either warm or hot air, although much of the advice given them would come properly under the last heading. Much more might be said about treatment, especially the importance of treatment in open air sanatoria and the uselessness if not actual harmful-

ness of most medicines, which disturb digestion and thereby interfere with nutrition, but I cannot take more time for this subject and will say just a few words regarding the most important thing connected with tuberculosis, viz., prophylaxis or preventive treatment, and here disinfection or destruction of the infected sputum is the prime indication, for otherwise this dries, is scattered in the air as dust and inhaled by others, causing more victims. Patients should carry small paper sputum or spit-cups, of which there are various kinds, and these should receive all discharges from mouth and nose and then be destroyed by burning. Spittoons, unesthetic as they are, should be placed conveniently in the halls and wards of hotels, hospitals, sanatoria, factories, stations, railroad trains and trolley cars, and these spittoons should always contain antiseptic solutions and be thoroughly cleansed daily. Spitting on the floors of all these places should be positively forbidden and offenders punished. Tuberculous patients should sleep alone and kissing should be forbidden. The bedclothes, linen, handkerchiefs, napkins and eating utensils should be thoroughly disinfected by boiling at least half an hour. Rooms should be cleansed with moist cloths and swept with windows and doors wide open, or still better, vacuum cleaners used. The dangers of swallowing sputum, thereby perhaps causing intestinal tuberculosis, must be explained and it would perhaps be wiser to rinse out the mouth with a weak antiseptic solution before eating or drinking. Weakly children should be brought up in the open air, carefully nourished, watched during and after acute infections of all kinds, kept but few hours in school, sent into the country during vacations, taught moderation and self-control, and later on, be informed regarding the dangers of alcoholism, sexual excesses and venereal infections. In addition to these measures for the treatment and protection of individuals, it is most important to carry on constantly a campaign of education of the people by publication of the dangers and preventive measures in tuberculosis as is being done in various states, and especially by the excellent pamphlets of the Illinois State Board of Health, the Chicago Tuberculosis Institute and the Ottawa Tent Colony. Also the establishment of open-air sanatoriums for the poor, among whom the mortality is four times greater and the prevalence of the disease many times greater than among the well-to-do classes. Also the building of separate hospitals or at least separate wards for the advanced and hopeless cases of this disease. Also the regulation of the air capacity of dwelling-rooms in tenements, factories and stores, better arrangements for ventilation of churches, schools, theaters and all public buildings and the ventilation of houses, especially the bed-rooms, by wide open windows, both day and night. In Germany the reduction of mortality by 33 per cent. is clearly due to an awakened public intelligence, and our country certainly should not fall behind European countries in this respect. Far more might be said about this fatal disease and also about the so-called minor infections, such as influenza or la grippe, measles, pertussis or whooping cough and others, but I have already taken too much time and must bring this long article to a close.

And now in conclusion, let me say just a few words about the effect of preventive medicine on the physician himself, and will you pardon me if I quote with a few slight changes part of a tribute to the medical profession, which I wrote a few years ago as the closing portion of an article on the water-supply and sewage of the lake shore towns of Lake County, and after reading to the local physicians, it was published by their request in the Waukegan *Sun* for the benefit of the public.

I believe the spirit which leads physicians to investigate the causes of disease and to try to find remedies and means of prevention is essentially the same spirit which prompts men and women everywhere to all good and useful and unselfish deeds. I wonder how many of the dear public ever stop to think what a self sacrificing work that of preventive medicine is. I wonder how many even begin to realize that the work which the Health Commissioner is trying to do is not only injurious to his own financial interest as a physician, but also to the interest of all his fellow practitioners who must assist him in order to make his attempts to prevent the spread of disease successful, for every such prevention of disease simply cuts down the very source of income of some physician. We understand that from the financial standpoint we are all fools in this respect, but no honest and conscientious physician hesitates to do his full share to make the prevention of disease successful, for he realizes that this is his duty to his fellow men and that no one else can perform this most important duty. And yet, strange as it may seem, we constantly meet opposition from the very people whose health and lives we are trying to save and are abused and condemned while doing our duty by antivaccinationists, followers of Voliva and other so-called "faith healers," and by all kinds of cranks and fanatics.

"Greater love hath no man than this; that a man lay down his life for his friends." This was the beautiful epitaph engraved on the tombstone of the grand old physician who was the hero of Maclaren's most touching story of "The Doctor of the Old School," and I believe the same epitaph could be truthfully placed on the headstone or monument over the body of many a faithful, conscientious physician, who has devoted his life to the welfare of his fellow beings in city, town or country practice in every state of this Union. Medical annals are filled with records of its heroes and martyrs, both in peace and war, but I believe no more heroic or self-sacrificing deed was ever recorded than that of the physician in some European city some years ago who was experimenting in a laboratory with the germs of that horrible Oriental scourge, the bubonic plague. Accidentally infecting himself, he realized that his case was hopeless unless he obtained the best of care, but in doing this he must expose at least one other person to fatal contagion. So what did he do? He posted a notice outside the laboratory that no one should enter, locked the door and waited there patiently and grandly through days of great suffering until the angel of death in mercy released his victorious soul from his tortured body. The more I know of the heroes, the sacrifices and the triumphs of medical and surgical science, the prouder I am to be a member of this grand old profession, which I

believe, on account of its wonderful achievements, its prevention of unspeakable suffering, its saving and prolongation of countless precious lives, and above all, its self-sacrificing devotion to the welfare of humanity in the prevention of disease, is entitled to stand side by side with the gospel ministry and the profession of teaching as the highest and noblest of all the occupations of men. These noble professions are united in the life and work of the medical missionary, whose self-denying service to the bodies and souls of humanitay in foreign lands resembles most closely the Divine work of the great physician. I am an optimist and believe in the ultimate triumph of right and justice over all wrong, of knowledge over ignorance, prejudice and superstition, of Christianity over atheism, skepticism and paganism, of happiness over sorrow, of health over disease, and finally of life over death. I believe that the grand old medical profession will go on from victory to victory and that long after Dowieism, Eddyism and every other pseudo-religious, faith-healing fad has passed into well merited oblivion, the physician and surgeon will still be blessing humanity, relieving suffering, saving life and going on triumphantly in the prevention of disease until in the Divine plan of the ages, death itself shall be no more, and every true physician, every faithful minister and conscientious teacher, every earnest unselfish worker for the welfare of mankind, all the good and great and noble of the whole earth and the self-sacrificing heroes and martyrs of all the ages shall enter that life where activity, learning and progress shall be untiring and unlimited, and where happiness, honor and glory shall be eternal.

ARTERIOSCLEROSIS NOT A DISEASE OF OLD AGE ALONE *

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Probably no word or compound of words in medical language has come into so general and vulgarly abusive use, as has this one of "arteriosclerosis"; it seems as though it has been so easily born into the vocabulary of medical words and so freely used that its real meaning has been lost in the easy lingual trill of its orthoepy; the layman has appropriated its anglicised substitute of "hardening of the arteries," and is rolling it along with the glibness of the name of a new breakfast food, on familiar grounds with the doctor who uses the latinized hyphenation.

It is easily recalled by us who have spent a life-time in the study of medicine that the earlier conception of this malady was pretty generally regarded as a chronological or calendar disease; to have said of a subject that he or she had arteriosclerosis was to imply that only a stage of senescence or a period of longevity had been attained without reference or knowledge of its etiology; that the calcium plagues of advanced arteriosclerosis were only the mile-stones in the journey of life; Prof.

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Eli Metchnikoff and Dean Osler easily fall into the common trench of the common stream and ally this disease with the metamorphoses of age; we are, however, to regard it as among the gravest diseases of our strenuous educational, industrial and social life, with a side-chain reaching out to every vital organ, the brain, the kidneys, the heart, bringing a train of interminable sequlae.

Its etiology must necessarily revert to tissue metamorphosis of occupation, habit and environment; to air, food and fluid metabolism; how much these are dominated by the correlation between the cerebrospinal axis and the functional ganglion will open a labyrinth of psychiatry, which we dare not enter for an evening's paper; but, fundamentally this correlation must be reckoned with in any and every principle of vital dynamism directing nutritive distribution and tissue growth and waste; it is not adequate to base ultimate conclusions on the evidence of experimental comparative physiology in a disease so humanly intricate as arteriosclerosis; there is an essence, an aura of life in man above the animal, entangling him with most of his etiologic pathogeny that cannot be ignored.

Original experimental laboratory research is not possible to the general practitioner and should not be anticipated; the general practitioner, however, who has resided in a district or a community for a time, has inscribed on the index-rerum of his memory such an array of clinical and pathologic material of the dietary habits and ethics of his neighbor, that if rightly tabulated and accentuated, will have much practical value, if not excel the experimental physiology and pathology of the scientist's laboratory; he has seen the artisan, the farmer and the merchant go about his vocation, and later he has seen him staggering home with the unsteady step of ataxia; he has been called when his speech was thick and his face livid and drawn, and words were lost to him in the grip of amnesia and aphasia; he has been called in to prescribe for symptomatic cephalalgia and nephritis, where he at once knew that his friend and patient was the unfortunate and unwarned subject of a long-standing hypertension, probably an advanced arteriosclerosis, and that to which his attention has just been called is only the sequel of conditions pre-existing a long time, due in part to his strenuous vocational life and over-indulgence in diet and drink; and finally he has been summoned to the coroner's inquest of alleged obscure and sudden death, that he knew long before was impending.

Study and observation of arteriosclerosis for the general practitioner must rest on the fundamentals of etiology and pathology; in this he can go back as far as the Pythagorean theory of coction and crisis, or to the theory of the four humors and the four elements and the "irritability" of Glisson and Haller,[1] or he can secure the latest monographs from the experimental laboratories of Europe and America and familiarize himself with the very latest in biochemistry, chemical pathology, modern organic dynamics and histology, as well as all the alluring considerations of present bacteriology. None of these basic principles old or new, can be ignored; we are in the atrium of all these things, where the dynamism

of living matter and organic and inorganic substances are struggling among each other for supremacy in this new arena, demanding the ever-present but hidden secrets of life.

Students of clinics and students of pathology must be students as well of biology, ecology and microhistology; they must also have a knowledge of the chemistry of the fluids within, and exuding from the body, as well as a comprehension at least of the dynamics of living matter in health as well as in disease.

Present-day exactions of the physician are many and important; no avenue can be left unexplored.

In the later unveiling and rehabilitation of the potency of the pituitary body, the thyroids, the parathyroids and the adrenals, we are viewing phenomena that revert to Addison's disease, that illusive and elusive chromatic disease of earlier medical thought and study, and we are wondering whether the diminutive pituitary is again going to dominate in its Turk's saddle to direct to malformed destiny, cretinism, giantism and acromegaly; or whether its infundibulum in some erratic moment is going to close our existence; or whether if these ductless glands possess the property, *hormone*, given them by Prof. E. H. Starling, of University College, London, of influencing the great sympathetic nervous system and preserving and controlling the tonic contractions of the veins and arteries, have we not here in these ductless storage-cells, the chromaffin system, with a wireless "connecting link," an autocontrol, as well as an autotoxin, a vital agent, neither bacterial nor chemic, but dynamic, influencing blood-pressure?[2]

When we follow the conceptions of Edward A. Shafer, Professor of Physiology in the University of Edinburgh, and President of the British Association for the Advancement of Science, as expressed in his presidential address last June in Dundee, wherein he predicts the possibility of life in the simple moisture of formless cosmic material, or when we realize what Jacques Loeb, Gideon H. Wells, MacCallum and Barnes (deceased), are suggesting and have suggested in vital processes, are we not appalled at our earlier superficial histologic and chemical knowledge?

Glisson, Haller and Schwalm shot a ray athwart the track of progress that set other men to thinking, and forty rays shine now, where only one shone before.

Arteritis and endarteritis may be, like any other inflammation, either acute or chronic; acute inflammation of the walls of the arteries is grossly attributed, first, to some mural or intramural traumatism; secondly, to inflammation in some closely associated organ or tissue, or to the transmission of some septic matter directly through the blood-stream, through the lymph-channels or through the arteries' own vasa-vasorum from an affected area; irritating toxins may be introduced through the food, drink and stomach channels in the regular way, or they may reach the blood-current through the briefer and more direct route of the respiratory tract and the CO_2 and oxygen exchange.

Whatever induces hyperemia anywhere causes hypertrophy in the connective tissue. Huchard began his lecture in the last Congress of

Physiological Therapeutics in Rome in 1907, by saying that "all arterial cardiac pathogeneses begin with intoxication, continue through intoxication and end in intoxication," not stating whether the toxin be chemic or bacteric.

The factors oftenest alluded to in text-books that produce the morbid changes in the artery walls are usually, first, syphilis, then alcohol and the agencies that are supposed to produce rheumatism and gout; and crowding to the front in later and later-studied scientific monographs and text-books, *is tobacco.* With these, would, of course, be vocational exposure, strain at manual and mental labor and sexual excesses. That arteriosclerosis had hereditary contiguity and continuity is common observation; that persons pursue their routine of daily life depressed by hypotension to alarming melancholy or exalted by hypertension to lofty aspirations and wondrous achievement we daily see. They are unfortunately unconscious of the impelling toxemia that is driving them through this toxin and hypertension to do these great, sometimes erratic things, their friends cannot understand, while embolism and hemorrhage are plugging trunk arteries leading to the brain and important viscera, causing obscure and distressing symptoms or sudden death. The startling perversions of ethics in public life, the numerous and sudden deaths at seemingly dramatic periods of public men in apparent possession of vigorous health, are all too frequent, and point to a dereliction of the patient or the faulty diagnosis of the physician. With our continual boasting of increased longevity we must recognize that the mortality after so-called middle life is growing worse, and the deaths from diseases of the circulatory system increasing at an appalling rate.

From the monthly reports of the State Board of Health of Iowa, for August and September, there are *three* deaths from disease of the circulatory system, not including nephritis and other sequences, to *one* death from diseases of the respiratory system, admitting asthma, croup and diphtheria as of the latter; and Iowa is the fairest representation of uniform distribution of urban and rural life of any states where vital statistics are kept. Chicago's mortality statistics do not deviate far from this.

There has been an increase of over one hundred per cent. in thirty years in the death-rate from diseases of the heart, blood-vessels and kidneys, including apoplexy or cerebral hemorrhage. Three hundred and fifty thousand Americans die annually from these diseases,[3] as against the shibboleth of the antituberculosis orator of two-hundred-thousand from that cause, and little has been said about the mortality and impairment from circulatory diseases and their sequelae; 60 per cent. of these should be prevented by early and accurate diagnosis and emphatic warning. *To err is human; to diagnose is Divine.*

That more men than women are subject to influences that produce arteriosclerosis is apparent; competitive conflicts of life, grosser exposure, excesses of every kind, neglect and residual toxins, all contribute to cause this disease and cripple the efficiency of the modern man or woman. Direct infections cannot be denied. Blood-count may vary greatly on

account of the large number of causes which produce arteriosclerosis; there are no microscopic blood-changes which in themselves can be said to be definitely associated with arteriosclerosis.

As arteriosclerosis follows many of the acute and infectious diseases from scarlatina to malaria and rheumatism, so it may follow any of the infectious diseases at any age, and can thus easily be placed outside the rôle of senile diseases, because childhood and adolescence are its acuter victims as surely as the middle aged are its chronic ones; puberty is recognized as an especially trying time for those with previously damaged hearts.[12] Every child should have the benefit of a close examination of its circulatory apparatus; the systemic and pulmonic circuits should be complete; the relative size and position of the heart should be charted; defects in prenatal position and development may thus be discovered and closures and openings of the fetal apertures, and the completeness of the new pulmonary short-circuit be noted. Pulse rate and volume is as important in the child, well, as at the clinic or autopsy; cardiac manifestations of disease in children are long apparent before there are arthritic or muscular ones, and the so-called "growing pains," and "rheumatisms," are the diagnoses of the busy neighbor or the meddlesome aunt, that the indifferent or politic doctor may agree with, to the lasting reproach of his profession and the detriment of the child.

There is a cardiac cachexia marked by extreme tissue change, as thickened nose and lips, clubbed fingers and shortened dorsum, with also defective heart and weakened artery walls. A small heart predisposes to tuberculosis and a defective one to mental deficiencies, circulatory diseases and renal sequelae. The usual casual recommendation that the child will "outgrow" these conditions is both the bane of youth and the opprobrium of the physician.

In the endogeny of the mammalian heart there is no greater complexity known, than this of the heart and the arrangement of its vessels; their intricate and intimate association with vital organs and accessories places it foremost in functional and pathologic study through both adolescence and senescence.[4] Study of arteriosclerosis is in the subject and not in the autopsy or the calendar. When heredity projects poor tube material into progeny through syphilis, alcohol or tobacco, any child may have arteritis or endarteritis in any degree; they have the same etiology and pathology as pericarditis and endocarditis and lead to the same sequelae as in mature adults.

There have been a great many diseases with exaggerated names reported under various titles, like "arteritis-nodosa, "idiopathic arterial hypertrophy," "ossification" and "calcification," whose descriptions conform so well to that of a definite arteriosclerosis, acute or chronic, that they may well be taken into the general classification of arteriosclerosis. Anabolism as well as catabolism is claimed by Cohnheim to be going on at all ages in the bones; so connective tissue hypertrophy as well as atrophy, softening and necrosis, is also going on at all ages in the connective tissue skeleton of the arteries, which is *their* skeletal frame work. There are tissue characteristics running through families whose germ-

plasm stigmata will recur with startling DeVriessian regularity to baffle both diagnosis and prognosis. Physiologic, not to say pathologic senility begins all too early; our blood-vessels are wearing out before their time. The mortality after middle age is growing worse and the vitality of the people in all probability is deteriorating.[8]

The alcohol and drug — tobacco and cocain — habits are constantly adding to the list and the crippled and the death roll; what part these drugs play in crippling the efficiency of our present youth and blighting the germ-plasm for future generations no student-actuary or statistician can even approximately estimate; until we have research men free from the taint of either or both, no truthful results can be expected on the subject; moral courage is seemingly lacking to take this study up as it merits. Idiocy and insanity are increasing at an alarming rate in consequence of these pernicious habits.

Whatever disease, trauma or toxin induces hypertrophy anywhere, also causes hypertrophy in the connective tissue of the media; elastic tissue is also prone to an early calcification; thus it is not uncommon to see the elastic laminae of small arteries calcified in an apparently selective manner; calcification may involve any sort of a cell, provided it is degenerated sufficiently, especially connective tissue cells.

Every formative event in an organism is a phenomenon of matter in motion under law;[11] this will apply to pathologic as well as to physiologic processes through perversion instead of regular formation. We know that the germ possesses something more than merely the fundamental capacities for metabolism and growth; it is subject to sadly distorting forms and painful function.

There are no apparent limits to the possibilities of the study of the blood, for it represents a little of every organ, and a good deal that is characteristic of itself. It is a living plasma from its corpuscle to the lubricating secretion of its endangial wall. Sclerotic lesions may be in any artery, often in the seral capillaries, more especially in the aorta; bacterial infection is not necessary to an inflammatory reaction; an immense number of what we consider sterile substances both fluid and solid, soluble and insoluble, organic and inorganic can incite a toxic reaction which will equal the invasion of any microorganism; all the toxic proteids of meat, sterile olive oil, egg albumin, even physiologic salt solution introduced into the body may cause inflammation;[8] passive filtration, or active osmosis may pass chemical toxins as well as pathologic microorganisms through seemingly impervious and contiguous membranes that can excite irritation; even tissue that has been destroyed, necrosed, may act as an inflammatory irritant; the débris of hemolysis may irritate the intima to active inflammation.

As a blood-pressure proposition, pregnancy and the secretions or substance of the placenta must receive recognition as its importance merits; pregnancy in health is accompanied by a rise of blood-pressure of 10 to 15 mm., with but little minimal pressure; in albuminous urine, however, the subject of blood-pressure becomes of paramount importance.

especially to the practitioner who embraces obstetrics in his routine work. Nothing can be more appalling than to be confronted by a thrombus, a hemorrhage or an eclampsia. Eternal vigilance is the price of peace and safety in this service; blood-pressure is as important as urinary analysis, as a red light to safety in the long road of two hundred and eighty days of anxious gestation. Splanchnic ischemia from an atheroma or sclerosis from the blood-pressure of the usually plethoric visceral vessels of pregnancy, and especially during labor, should not be ignored; for it too is a cause of sudden death; sighing sudden pallor and the facies of physical exhaustion are syndromes of momentous import.

In paracentesis abdominis the sudden withdrawal of large amounts of fluid may release the supporting pressure of the vessels whose resiliency is lost through arteriosclerosis, and may induce an alarming syncope, sometimes a fatal one; blood-pressure has been known to fall 32 mm. in paracentesis abdominis.

Living organs and tissues produce some electrical energy; a positive current has been demonstrated by a very delicate galvanometer from an uninjured healthy nerve cell, artery wall or other tissue area to an injured cell tissue or area, the electrolyte being the blood; its neutrality, alkalinity or acidity, being the controlling factors in this electrolysis; thus, a very active muscle, wearied by work or injured, or a wearied or worried brain-cell, is accompanied by the production of an acid electrolyte, viz., carbonic acid, possibly lactic, phosphatic or sarcodic acid, either of which will excite electrolysis; in most fevers the alkalinity of the blood is reduced: the corpuscles are richer in diffusible alkali than the plasma or serum; these acids, besides stimulating electrolysis, can also produce a precipitation of salts irritating in themselves and leaving deposits along the trail of the injuries. According to J. Loeb,[8] metabolic activity is favored by certain degrees of alkalinity; acid conditions increase the viscosity of the blood making it harder for its propulsion through the arteries; thus trauma, thus irrigation, thus acid blood are a trilogy to produce blood-pressure and arteriosclerosis.

Klotz finds that the calcium is by no means always deposited in the patches of injury or atheroma, but exists also as rows of fine granules between the muscle fibers of the artery walls; here it causes only a slight rigidity of the artery; when the deposition is very slow the capillaries of the vaso-vasorum and the lymphatics can remove the calcium from the diseased area before deposition and irretrievable entanglement.[9] Whether the calcium is deposited or not, the area of diseased media leaves a weakened portion of the wall, and this area becomes the seat of sacculation and aneurysm, may be atheroma, rupture, paralysis and death.

Admiration for Virchow, the great German pathologist, has not died out after half a century, nor will it die out as long as cell pathology continues; his theory was that arteriosclerosis is due to a new formative stimulus; he thus early had the perspicacity of Loeb, Shaffer, Rand and Wells. What that stimulus is, none of them states; but when we recognize blood as a living plasma capable of its own creation and inhibition whatever its hormone we can understand that by its own "specific action"

—Virchow's phrase, it can place its plasma wherever weakness or trauma may demand it; thus Thoma holds that arteriosclerosis is a compensatory thickening called forth by the vessel's own demands to strengthen injured or thinned artery walls; these studies were made during the injuries of athletics and competitive contests of adolescents. Jores presents similar views, though regarding the increase blood-pressure against the lengthened arteries as a cause of thickening, independent of the lessened diameter and the thinned walls. These observations are made without regard to any toxic or inflammatory invasion of the media, ignoring the nearer intima, the real seat of thickening.

Further, Koster and his pupils, authoritative students, relate thickening altogether to invasion from outside the arteries, and that the thickening takes place in the tubes, and hence narrowing the lumen increases blood-pressure and the strain on the heart. Acid conditions are increased in muscle strain in athletes and laborers as well as in disease and traumatisms; in turn, these acids will precipitate the soluble calcium to an insoluble calcium carbonate in the blood-stream, whose crystals irritate the intima, penetrate to the lattice frame-work of the connective tissue of the media and here set up the first process-irritation, the beginning of inflammation and resulting hypertrophy, incipient arteriosclerosis, while the calcium crystal remains in the connective tissue meshes; here it easily becomes the avid nucleus around which will gather succeeding crystals until a plaque enmeshed in hypertrophied connective tissue makes the gross, nodular and tortuous, palpable lesion of arteriosclerosis-nodosa apparent.

Martin H. Fisher, in his "Nephritis," 1912, page 2, holds that "All the changes that characterize nephritis are due to a common cause—the abnormal production or accumulation of acid in the cells of the kidneys." The action of this acid on the colloidal structures is due to morphologic conditions and diseases of the kidneys, is his argument. Thus, this primitive chemical process becomes the genesis of arteriosclerosis; thus the etiology is, with the student of chemical pathology and vital dynamics, who toys with ions, anions, molecules and atoms and the intercellular nerve and muscle electrolytes, rather than with the bacteriologist. Excess of proteids, as is well recognized, also increases acidity and viscosity; venous blood has a higher viscosity than arterial blood, owing to the larger quantity of CO_2 in it, produced by aeration carried along in its stream and osmosed through the adventitia and the arteries' vaso-vasori; the media and probably the intima have filaments or net-work of vaso-vasori penetrating their substance as well; very good histologists hold so. Also, invasion may be through the pabulum of the lymphatic lacuna and canaliculi penetrating these several layers even to the intima. Infiltration follows all these paths either for repair or nutrition: either or all tend to produce thickening; if necrosis has already taken place, calcification is the rule; if only inflammation, then thickening only results. Ophül's argument is that anatomically the artery walls are a unit and that arteriosclerosis is a chronic inflammatory process which

attacks all the coats without specifying the etiologic substance at all. Here the chemical and bacteriologic pathologists find fields of conflict.

We should think of the arteries and vessels of the circulatory system as we do of the heart, the liver or the kidneys as a definite part of the body liable to be the seat of inflammation from the same causes as those which produce similar changes or diseases in the other parts of the body.

Symptoms complex relate first to the heart, secondly to the brain and lastly to the kidneys. To the general practitioner, objective symptoms are of first and most consequence; he must be able to distinguish between the blush of the maiden and the plethora of the gormand and of the nephritic or pregnant matron; both are hyperemics, both indicate increased blood-pressure; but one is the consciousness of a pure emotion and the other is the flush of a toxic hyperemia; he must recognize the hyperpnea of healthy exercise and the polypnea and orthopnea of heart hypertrophy and dilatation, the result of a hypertension of a central or circulating toxemia; he must recognize in the puffy eyelids, livid face, unlaced shoes and unbuttoned girdle, maybe aphasic speech, the objectives of an interpressure as surely as he will later with the sphygmomanometer or the test-tube; these are some of the perspectives of the astute pioneer physician long before the so-called "specialist" issues his imperious edict with the portentious thrill of "arteriosclerosis." Subjectively, the patient will complain of heavy headaches, not the acute lancinating and fugitive ones of exhaustion and neuritis; and he will have dizziness and hebetude, insomnia and night cramps of the extremities; he will tell of anesthesias of the extremities, formications and pricklings, and he may relate the incidents of threatened "strokes," and he may have had them; he will relate the frequency of rising at night to urinate; he may not consult a physician until an occlusion has produced an amnesia, a startling gangrene, or he comes limping to him with a serious hemiplegia or grave ataxia. Toxic angina, neurotic or sclerotic, is not uncommon, caused by tobacco, alcohol or coffee. "There's a reason."

The relation of high blood-pressure and arteriosclerosis has been much discussed. Which is primary? Cerebral excitation and infection must precede acceleration and blood-pressure, while arteriosclerosis is a result in easy etiologic and pathologic sequence. Are they produced by the same cause and at the same time? At any rate they are closely associated, and with sometimes tenderness and thickening of the radial, temporal and other palpable arteries, hardening is readily detected; then there is the hypertrophy of the left ventricle with accentuation of the second sound, the snapping of the mitrals and semi-lunars in easily recognized causal and mechanical succession that trained auscultation knows, distant wig-wag signals as it were, of an approaching and dangerous foe. By this compensatory hypertrophy and fortification the heart is able to drive the blood through the narrowed and stiffened arteries and maintain for a time normal circulation and secretion; in the end the heart fails or disease develops in some territory—symptoms relative to that part, tissue or organ; the source and course of the disease depends on the capacity of the tissues or organs for adjustment to function and com-

pensation to that specific organ or tissue involved; on the ability of the subject to live a life of rest and ease, and direction of his diet and drink, depends his longevity.

Hypotension and hypertension are related phenomena that have crowded medical literature past pages into volumes; Hirschfelder,[1] in his classic work on "Diseases of the Heart and Aorta," employs seventy-two references or citations at the close of the chapter on arteriosclerosis, and seventy on blood-pressure; of course, there must be cross-references. In the chapter, Diseases of the Circulatory System, are five general captions, with forty-three subdivisions, not including diseases of the blood. The high blood-pressure, far from being in itself an evil thing, is decidedly advantageous, if not necessary; only through blood-supply sufficient to satisfy their physiologic demands can organs functionate; this holds for the kidney, probably more than for any other organ, unless it be the dominant brain; because in the kidney is the great filter apparatus of the blood; the purest blood of the body is that that has passed through the kidney; through the increased blood-pressure only, can a sclerotic kidney maintain the normal secretion from such kidney. In weakened or already diseased heart or blood-vessels this does not prevail, and many toxemias are inherent, and subtly prevail; remote pediatric trauma to the encephalon or cord, should be thoroughly inquired into.

The symptoms that can be produced by the anomalies and irregularities alone of the size and shape of afferent branches of the various segments of the arch of the aorta and its anatomically related structures are of themselves astounding. The fact that the ascending portion of the aorta is enclosed within the pericardium with the heart, and moves with its movements synchronously with systole and diastole, makes the rhythmic and dynamic impact of the blood column against the inner concavity of the lumen of the aorta harmless, and preserves the immature and constantly replicating lamina of the intima from destructive dissection and pathologic sequences, such as sacculation, atheroma, bulging or aneurysms; still here in the ascending portion of the aorta is the seat of the greatest and grossest pathologic exhibitions; here, next to the cerebral and ocular capillaries, atheromas and plaques form earlier than in any other portion of the circulatory apparatus; the valveless mouths of the coronary arteries and their interminable inosculating branches easily allow a congestion that results in atheroma, rupture and sudden death. The constant forward movement of the blood and the ever widening lumen of the aggregate of the dividing arteries are factors to both lessen impact and recoil and consequent traumatic dilatation, or real physiologic not pathologic hypertrophy. A distal or proximate traumatic or chemical phlegmon may occlude an artery, but anastomosing branches can supply a limited defect, and a slightly and temporarily impaired function could obscure diagnosis, unless it be on some important crest of a convolution or in the familiar valley of the cerebral ranges. How much interosculation the coronary arterioles possess is a subject of inquiry: whether, much or little, rupture near their base can and does easily produce a fatal cardiac ischemia.

Homogeneous living blood is a living plasma amenable to its own inhibition whose direction is ever forward and never recessive; the transmission of bioenergy from corpuscle and plasma to intima and reverse is a recognized but inexplicable process ever tending to retain function and make repair;[3] softening or sclerosis is not necessary and was never intended; repair through hypertrophy is Nature's conservation. That the unremitting activity of the heart's musculature is not within the higher volitional control, and without the subject's knowledge should beget an early recognition and search for competence, error and disease.

The child's and adolescent's hearts have been neglected. One of the manifest causes of increasing heart and blood-vessel disease has its beginning in the marked and hurried changes of relative sizes of the heart and vessels during these periods.

Relatively the heart of the young is large and heavy;[4] in the newly born it is 0.89 per cent. of the body weight; in the adult it is 0.52 per cent.; its blood-containing cavity is small, 23 c.c. at birth, as compared with 100 c.c. at the seventh, and 140 c.c. at the fifteenth year; thus at the fifteenth year the heart contains six and one-half times as much blood as at birth and one and a half more than at seven years; the heart muscle at birth is massive and equally thick on the right and left sides, owing to disuse of the right side during the fetal period; the valves are small, elastic and vibrate quickly; the muscles grow firmer and the heart is heavier, but its circumference remains the same; the large arteries, namely, the abdominal, carotid and subclavian begin to lose their disproportionately large size, diameter, and from the seventh to the fifteenth years of growth, the blood-vessels are lengthened from 20 to 35 cm., just when care, and not violence should be observed; then new tissue and muscle adjustments are being made to greater volume of capacity in the areas supplied by these vessels, and the vessels are worked to their capacity.[4] The soft heart muscle, mere nucleated masses of protoplasm, held together by the trabeculae of their own stellar cell tentacles, should be carefully guarded from this period on; the heart muscle of the young is easily exhausted and as easily attenuated or hypertrophied.[9] The kidneys have similar tissues, besides their wondrous filter scheme; here are the beginnings of pathologic, circulatory and secretory lesions, that, with modern technic and instruments of precision, has enabled us to remove the autogeny and etiology of arteriosclerosis from senescence and place it rightfully among the diseases of youth.

Trauma, as the result of the many unguarded excesses of adolescence, in play, in labor and excessive athletics, go unobserved and unheeded in the circulatory developments of youth that readily permit and grow into an hypertrophy or dilatation, or perhaps an endo-, myo- or pericarditis; to say a youth with a crippled heart will "outgrow it" is a confession of medical infirmity. As the endo- and pericardial membranes are histologically the same as the synovial linings of joints, they may be deemed susceptible to the same etiologic influences as are the joints; and hence rheumatic and gout irritants as readily excite inflammation in the

endangeii of the blood-vessels as they do in the synoviae of the joints. Fatigue and exhaustion produce toxins too little recognized; they produce an acid, slightly acid condition of the blood, sufficient to cause precipitation of the soluble calcium; it produces an excess of detritus that overworks the kidney; the glomeruli of the kidneys are broken in their integrity and albuminuria is found in nearly all fatigue tests: whether the toxins of these metabolisms accumulate in the muscles and produce rheumatism, whether they lodge in the intima and produce arteriosclerosis, or whether they irritate the cortical capillaries is not yet positively known. Alienists know that in the criminal and insane there is always marked circulatory disturbance; is the lesion to be in the cerebral, the renal, or in the seral capillaries?

The relation between the size of the heart and the circumference of the arteries is gradually changed during the growth of the body, and there is consequent variation of blood-pressure; during this period of puberty the heart increases very fast in volume, for the arteries increase much in length, with the increase of length of the body;[4] but their diameter is relatively little increased so that much more work is required of the heart, and easy dilatation and hypertrophy follows, with arteriosclerosis an easy sequence. In this way we will be able to recognize arteriosclerosis as one of the grave acute as well as chronic diseases prevalent in all classes and all ages of people. It is not enough that we study its autoinfection, but we must consider as many extraneous causative factors as we know of, and remove these; all the economic conditions of labor and commerce we cannot control; the stress of present existence is on us, and if we can be impressed with the fact that more deaths occur from heart- blood-vessel and kidney disease annually whose pathology is arteriosclerosis, than from the Great White Plague so-called, we can appreciate the importance of our topic and seriously study its prophylaxis.

Blood-pressure, hypotension and hypertension are signals of irritating or toxic invasions, as will be appreciated; the causes that bring this about are not always simple ones: they may be from direct or reflex cerebral stimulation; domestic or business worry; political excitement or over-study; they may be from acquired or functional apnea, lack of air, and blood aeration, air hunger, or they may be from that lowest function of animism, the stomach—food, ingestion, digestion and "intermediary metabolism."[10]

Next to connective tissue hypertrophy from too early and too often repeated assault and distention of the vessels in the laborer, the college and athletic competitives of adolescence, is the irritation and inflammation produced by the introduction of foreign toxins, or substances that may become toxic, passing through the nutritive channels and become toxic either in the glands before or during elimination and carried either as residual chemic or putrescent toxins into the blood-stream.

Dr. A. D. Hirschfelder, Associate in Medicine at Johns Hopkins University, under the "Etiology of Arteriosclerosis in Man," enumerates

causes in this order: age, hard work, alcohol, syphilis, vocational exposure, lead, phosphorus, and the more infectious diseases, especially typhoid fever.[4] He quotes and endorses Isaac Adler's experiments, wherein he says they establish beyond a doubt the deleterious action of *tobacco* on the arteries. Boveri confirms these reports. Bovaird, of Columbia University, in his recent treatise, "Internal Medicine," places tobacco next to alcohol. Statistics are the mystics of argument; the vicissitudes of life and their successes are the aggregate of energy, industry and age; these include hard work, mental or manual; this is the lot of such a large majority, that inclusion must embrace all; there is but small specificity in this; also alcohol is in almost universal use and this is inclusive: syphilis in some form is as prevalent; so, finding arteriosclerosis in a subject, which can take the blame? Syphilis cannot escape, because of its positive findings of spirocheta; the impact of strenuous life is on all; the bane of alcohol on ethics and health is all too prevalent, and none know it better than physicians. But, there is a toxic bane as universally prevalent as all other habits and occupation combined; it is the use of tobacco; this use seems almost universal; to isolate it as a causative factor would be impossible, but to utilize it, *is fair*. We know that a number of poisons are hemolytic; that they destroy the red corpuscles; the body may form its own hemolysin. The early practices of blood-transfusion from animal to human or human to its fellows were disastrous, and many lives were sacrificed before the micrology of hemolysis was recognized; reptile poison, as venins, are exceedingly hemolytic, and a number of plant poisons are strongly hemolytic; the blood does not furnish an amboceptor against phytotoxins, and thus destroys its own corpuscles. The working principles of Ehrlich's bacterial theory of immunity does not apply against the alkaloidal poisons, plant poisons—as morphin, nicotin, etc. The human body does not develop an immunity against these in the sense that it does against bacterial toxins; the blood-serum does not manufacture or acquire the substances capable of neutralizing these poisons; there is no amboceptor between toxic alkaloids and tissue, neither is there an affinity.[5] No enzyme or hormone directs them, neither is there an opsonin to indicate their presence.

A certain kind of habituation or resistance, but no immunization is obtained against alkaloidal poisons, like morphin, nicotin and their congeners; the blood-serum does not acquire any substance capable of neutralizing these poisons; there may develop an enzyme or tryptic that can digest, neutralize or destroy their toxin, but it is not now known. The resistance against chemical poisons is a very different subject from bacterial infection; there is no elaborate process of defense against the chemically simple poisons such as seems to be called into action by bacterial infection; hence an immunity or resistance similar to that after scarlet fever, small-pox, etc., does not exist for strychnin, morphin and nicotin or any of the phytotoxins or vegetable poisons.[5]

The earliest observation of arteriosclerosis brought about by toxic action of organic compounds, and one which establishes beyond doubt the *deleterious action of tobacco on the arteries*, is that of Isaac Adler, dem-

onstrating sclerosis in the smaller peripheral arteries of rabbits as a result of feeding them with infusions of tobacco. Boveri confirmed these results by giving infusion of tobacco by stomach-tube, and obtained atheromatous plaques or thickening at the base of the aorta in ten out of sixteen rabbits, while Baylac obtained sclerosis in each of eight rabbits into which tobacco infusion was injected either intravenously or subcutaneously. Jebrowsky and later W. E. Lee have produced it in rabbits made to inhale tobacco smoke. From Baylac's experiments, it would appear that in general the liability to occurrence bears some relation to the channel by which tobacco enters the body. This may explain the very marked action of tobacco, inhaled and entering the heart directly from the pulmonary circulation in smokers, as compared with the somewhat milder effects of chewing tobacco, under which condition the nicotin passed through and is perhaps somewhat attenuated in the liver before entering the systemic circulation, and has still to pass through the venae cavae, right heart and pulmonary circulation before reaching the coronary circulation. In smoking, however, the nicotin enters through the lungs and strikes its first blow at the coronary arteries and base of the aorta, where the elastic fibers are under the greatest tension, and hence most liable to degeneration. It is, therefore, easy to understand why smoking of heavy cigars should be one of the most potent factors in the etiology of arteriosclerosis and coronary sclerosis.[8]

Devoto's assistants, Josue, Forlanini and others, show that tobacco causes a hypertension resulting in vessel changes closely related to arteriosclerosis.

Gouget, of Paris, as quoted in the *New York Medical Journal*, 1906, conducted experiments on rabbits by introducing into their stomachs 10 to 75 c.c. infusion of tobacco; the stomachs of the rabbits bore the infusion well; the histologic lesions consisted of serious degenerations of the walls of the circulatory system, arteriosclerosis.

Emil Hess, of Berlin, in an investigation of twenty-five cases of the influence of tobacco on the circulation, found it is stimulating; it increases blood-pressure; he further declares that tobacco should be forbidden in all cases where we wish to spare the heart.

Dr. Frankel-Hochwart, of Berlin, Germany, in an article in *Deutsche Medizinische Wochenschrift*, of Dec. 14, 1911, on Nervous Diseases, says, "That nicotin poisoning affords a predisposition to *arteritis*." He discusses further the action of nicotin on heart and respiration and concludes his article by emphasizing the fact learned from his experience that the localization of the toxic action of nicotin is very much like that of syphilis. The influences of syphilis and alcohol in producing arteriosclerosis are so numerous and graphic that when *nicotin* is placed in the same class as causative factors by so eminent an observer and diagnostician it is not difficult to accept his conclusions. These enumerations could be continued ad infinitum—and the user will say *ad nauseam*. Yet every writer on the treatment of arteriosclerosis recommends the exclusion of tobacco as the first thing; the more recent writers being much more emphatic in this than the older ones; if it is not a factor in causing arteriosclerosis, why its early denial in treatment?

University and college physical directors have long ago shown by their anthropologic measurements and ergographic tests and critical observations that tobacco users do not equal the non-users in either athletics or studies; even their physical development is retarded, as shown by comparison of their growth in weight and stature.[9]

Are not doctors derelict in not presenting the truths of tobacco use to the youth of their patrons and of the community? It becomes humiliating to a learned profession when educational, industrial and commercial bodies observe this before doctors.

The trend of thought and truth on this subject is in the scientific literature, reports of experimental laboratories, not in the Lucy Gaston literature, nor of the tobacco trust's advertisements. There is a progressivism in ethics and study pertaining to the injurious use of tobacco among scientists and physicians, as surely as there is in politics; it is better not to be a "stand patter."

The report of the Commission appointed by the Academy of Medicine in Paris, on antityphoid vaccination, in their summary, report that those most benefited by the antityphoid vaccination are the female nurses in military and civil hospitals who never used tobacco, and young persons of both sexes who came from salubrious regions in the country and had not acquired the habit of tobacco using.

The Medical Department of the United States Army and Navy has under advisement the classification of its soldiers and sailors as to their use of tobacco and the influence of the antityphoid vaccination on users and non-users and its beneficence in the two classes.

Of medicines, the less taken the better; adrenalin should not be used; it will increase blood-pressure and has caused atheroma; digitalis is the *ignus fatuus* that has lured more victims to sytolic letheon, through the misguided ardor of the tyro, than arteriosclerosis and heart lesions combined; when digitalis is true, it is too potent to be left in layman's hands, and when inert it only misleads the doctor and jeopardizes the patient. Nitrites and strophanthus are more reliable. Sodium iodid is preferred to potassium iodid. Alkalis to keep the blood neutral or alkali; the same to reduce excessive gastric and renal acidity; the same care should be had in administering alkalis as any other drug or chemical.

With the fore-warning that either tactile or sphygmomanometric knowledge can give, it is predicted that early phlebotomy, with afterrest and careful drink and diet, arteriosclerosis can be arrested, near normal blood-pressure secured and life prolonged.

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REPORT OF FOUR YEARS' WORK ON CANCER*

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I wish to make a preliminary report of some work done by me during the past four years, in a small way, in the field of experimental non-surgical treatment of inoperable and postoperative recurrent cases of carcinoma.

Perhaps one of the most interesting studies in all medicine is that of cancer and its research. Back to the days where the history of medicine becomes indistinct and merges with its tradition, men have sought for the non-operative treatment of cancer with the same hopeful trust that the alchemist devoted to the discovery of the means of transmuting the baser into the higher metals, and with about the same measure of success. The work was done in an unscientific, desultory and unsystematized manner; it lacked the present knowledge of chemistry, biology, pathology and kindred branches, as well as modern systematic laboratory methods. The work of recent years, both in research laboratories and by individuals in this country and Europe, has been characterized by system and painstaking care.

The laboratory work has been more along the line of study of its etiology, cytology and transmissibility to animals of different species, or to different animals of the same species; the work done outside of laboratories has consisted in experimental therapy on animals and humans.

Notwithstanding this work, cancer remains to-day, as in the early days, material for the surgeon, although we may well believe that we are on the eve of the discovery of its specific cure.

From time to time the medical world hears premature reports from various sources of the discovery of the specific cure of this malignant disease, which do not bear the tests of time. Cancer pastes, electricity, light, Roentgen rays, radium, radio-active waters and bodies, ferments, bacterial infection, serums, vaccine and many chemical agents have been hailed as the possible means of specific cure. Some of these have unquestionably proved of value in selected and limited numbers of cases, but, of course, the majority have proved worthless.

Before discussing results of cancer investigation it is necessary to recall a few general facts regarding cancer and the cancer cell.

A cancer is an atypical neoplastic growth of a preexisting, heterotopic matrix of epithelial cells, persistently embryonic in type, prenatal or postnatal in origin. We may speculate as to whether this matrix is the result of misplaced cells in early embryonal life or the result of postnatal mischance; whether it is an example of arrested development or an anomalous reversion to a primitive stage in the evolution of the normal epithelial cell; but we must admit that it is composed of cells which are the persistence of an early embryonic type, less specialized and of a

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lesser degree of differentiation than the normal epithelial cell. They exhibit throughout their whole life cycle an atavistic tendency to perpetuate their early embryonic or prenatal characteristics. Indeed, they seem to represent transitional type between the protozoon and the normal cell. They never become a perfect adult epithelial cell, retaining even to the time of their degeneration this imperfection of development and, as in our social body, the defectives live a parasitic existence at the expense of the normal units.

The genesis of malignancy in cancer is its mitosis or cell division. Metastasis is an accidental consequence. Arrested mitosis in a carcinoma would mean a non-malignant tumor degenerating spontaneously.

I believe that the initial carcinomatous stage in a heterotopic epithelial focus is not, as has been maintained, cell migration, but cell division. This mitosis is almost immediately followed by cell migration and vascular proliferation. This gives us the "local infection" or malignant growth in the initial carcinomatous focus, or in those secondary metastatic foci which have become infected through the blood or lymphatic channels, and are distal to and isolated from the focus of primary infection.

As the carcinoma increases in size, the vascularization of the periphery keeps pace with the extension of the tumor, resulting in copious stimulation and proliferation of the peripheral cells. The axial cells not getting this nutriment, owing to the degeneration of the vessels axially, cease further proliferation and undergo degeneration.

The immediate and determining condition which causes the dormant cancer nest to spring into activity, is still problematic, although it has been the subject of much study and many theories have been adduced to explain it. I am led to believe that this augmented vegetative capacity is not entirely due to a change in the condition of the tissues which the cells inhabit, or "lowered physiologic resistance," but in a great measure to an extrinsic dynamic force resident in the nutriment of the cell, the blood. There is a physical and chemical change in the blood early in the carcinomatous stage and probably precarcinomatous, which is produced by an unbalanced metabolism. This change affects its alkalinity, specific gravity, viscosity and salt content. The altered biochemical blood conditions, acting upon the heterotopic embryonic epithelial cells, probably act as a stimulus and cause the progressive vegetative activity.

To my mind, any efforts at specific cure for carcinoma must be directed toward the restoration of the normal biochemical structure of the blood, in order to overcome the cell stimulation or fertilization, and toward a direct attack upon the mitotic function of the newly-formed carcinoma cell.

The carcinoma cell is not as resistant to adverse external conditions as are the normal cells; in fact, from the start it is characterized, as Thiersch has said, by degeneration.

The embryonic epithelial cell has a selective susceptibility for certain toxic substances which the adult or normal epithelial cell does

not possess, or possesses to a lesser degree. In other words, certain substances are lethal to the new carcinomatous cell in quantities which do not produce death in the normal cell.

I believe that Roentgen rays and radio-activity would prove effective against cancer, since the cancer cell is of such relatively low resistance, if they could be brought in contact with the most distal cells, but this is impossible, excepting in epithelioma, as the normal cells would begin to react and degenerate if in contact with these rays for too prolonged a time. Serum and vaccine therapy might be effective if the general organism did not react, as it does, to these agencies, before sufficient effect is produced upon the malignant cells.

To accomplish this selective fatality, the substances must be brought into contact with the new carcinomatous cells through the blood-supply, which is abnormally abundant in the periphery of the tumor—the malignant zone. This is the area of most rapid proliferation, the preponderance of growth and multiplication of the new cancer cells being in this region.

Chemotherapy, or chemicals supplied to the tumor cells through the blood, seems to me the only hope of the solution of the problem of cancer destruction, and of the innumerable agents used in this way the salts of the heavy metals, preferably those of the lead and iron groups, seem most indicated. It has long been known that a selective antagonism exists between the salts of the heavy metals and the cancer cell, and much work has been done in the way of attempting to decrease the toxicity of these salts to the normal cells without decreasing their toxicity to the malignant cell, in the same way that Ehrlich modified arsenic in salvarsan, but without success. Whether these salts act through their toxicity upon the cell body solely, or through an inhibitory electrochemical action upon the nuclei in their process of division, or by a combination of these two conditions, I am unable to say.

I believe that we shall eventually learn that the number of agents that may be used to destroy cancer growth, chemotherapeutically, not alone in the mouse, but also in the human, is many, and that we need not go prospecting in the mountains of the moon for rare and unheard-of metals, either; that it is not so much the metal employed, as using the ones selected in the proper manner; that is, with proper technic.

Wassermann has reported some wonderful results in mouse cancer with a combination of selenium and eosin, but owing to its profound toxicity, he has not used it in the human. Solutions of tellurite have been used in mouse cancer with good reports.

I am personally convinced that the only requisite for cancer destruction in the human is to use, with proper technic, a salt of the heavy metals, which is toxic to cell life and cumulative in its action.

At this point I would state that there is a class of substances, of which eosin is a type, which are passive, beyond giving to the cancer cell a hypersensitiveness or special avidity for the toxic metal salts, in the same manner as a mordant acts in the art of dyeing. These bodies are derivatives of coal tar, having the chemical formula $C_{20}H_{12}O_5$, with

either twelve atoms of hydrogen, or these twelve atoms replaced wholly or in part by other elements or radicals, e. g., fluorescin, $C_{20}H_{12}O_5$ and eosin $C_{20}H_8Br_4O_5$. They have the physical property of fluorescence. Their action is probably physical rather than chemical. When injected alone in therapeutic doses these substances exert no appreciable effect upon the tumor, but when given in conjunction with the salts of the heavy metals, a much less quantity of the latter is required to produce reaction than when these sensitizing substances are not used. I think they sensitize the chromatin threads of the nuclei in process of division, causing them to exercise a selective attraction for the metals; in any event, with their use reaction is produced in the tumor by the salts of the heavy metals which cannot be produced by much larger quantities of these salts when used alone. These bodies, in other words, increase the differential coefficient of receptivity to the toxicity of the metal salt between the normal and malignant cells.

I have used in several non-operative and postoperative recurrent cases in the human a combination of crystalline organic salts of copper and zinc, to which I have added one of the sensitizing substances above mentioned. While using this I make the blood a trifle hyperalkaline, and to reinforce the blood in its efforts to withstand the rapid absorption of the tumor detritus (protein end-products), I use phosphorus.

The soluble organic salts of the heavy metals are bound very loosely in their chemical combination, and when injected into the blood in solution, they are acted upon by the carbonate and sulphate of the blood, which precipitate them in a finely divided state, in which form they persist wholly or are in part changed to obscure albuminous combinations.

The mixture is given intravenously with normal salt solution in small, slightly and gradually increasing doses until the patient complains of a persistent metallic taste and colicky intestinal pains; here the less-resistant cancer cell has just passed beyond its point of tolerance to the toxic metal, when mitosis stops and degeneration begins. Small, infrequent doses then insure retrogression and absorption of the tumor.

The fixation methods at our command, hardening, sectioning, staining and mounting, involving so many manipulations, has a tendency to distort or at least change the tumor cells from fresh material, but by teasing out small numbers of cancer cells from perfectly fresh material in process of degeneration and treating them while under the glass with a couple of drops of hydrogen sulphid, we may see clearly the copper salts deposited either in or about the nuclei. Furthermore, if we make an aqueous mixture of tumor detritus in a test tube and treat with hydrogen sulphid, we obtain a positive copper reaction.

Some European investigators report results on mouse, rat and dog cancer with the use of silver and cobalt, which are inconceivable to me. They state that they begin to get results within a minute or two after injection, and within twenty-four hours they have the tumor pretty well destroyed. Fortunately, I have never gotten such results, as the human economy is not able to take care of such immense amounts of degenerated

cell débris, and the patient would die at once instead of the prolonged death that would naturally come to him if left alone.

The treatment extends over a period of from two to three weeks before any appreciable change can be seen in the tumor, and its degeneration and absorption takes from two to six weeks, depending on its size. During this time, if the tumor is of any considerable size, the patient is in a typhoid or septic state, the urine being laden with products of protein absorption—albumoses, peptones and amido-acids.

The absorption of the tumor is not complete at this, as the hyperplastic connective-tissue reticulum persists for many months thereafter—in fact, I doubt if it is ever completely absorbed.

I do not wish to imply that every case of carcinoma is amenable to this treatment, for such is not the case.

Before a specific may be accepted as such it should respond to the following tests: It should have been tried in a series of many cases, the diagnosis of which has been unquestionable. It should have given the identical results in each case, and a considerable number of years should have intervened without signs of recurrence.

I have not tried this treatment in very many cases, as work of this character done outside of an institution of considerable size lacks the opportunity of sufficient material, and my work was naturally confined to inoperable and postoperative recurrent cases only. I was personally satisfied of the correctness of the diagnoses, which had been made by competent men, and in some cases confirmed by the microscope. The results were as follows: One patient died before cell saturation had time to occur. Two patients died after cell degeneration had begun, from absorption of cell débris, the patients being too far debilitated by the disease to withstand the toxemic effects of the absorption of large tumors. One has been free from all symptoms of recurrence for a period of two years, and three for periods of less than two and more than one year.

My observation of the treatment has suggested the following:

1. That whatever hope we have of non-surgical cure of cancer, excepting epithelioma, lies in the salts of the heavy metals.

2. That owing to the toxic nature of the degenerating tumor mass, which has, in all likelihood, considerable to do with the morbidity and mortality in cancer patients at the present time, we probably shall never find a specific for every case of cancer. In other words, only those cases of cancer will respond to specific treatment which have not progressed too far to permit of saturation of the cancer cells by the medium employed; those in which there is not too great loss of body resistance to withstand the toxemia of tumor absorption or in which there is an accessibility for surgical aid in the removal of the degenerating tumor débris.

3. That a combination of organic crystalline salts of copper and zinc with one of the sensitizing bodies above mentioned will, when used with proper technic, arrest mitosis and permit degeneration in certain cases of carcinoma; that is, that in certain cases it is a specific cure.

4. That in all probability this combination will prove to be not the only one that will produce cancer destruction, nor perhaps the best one.

Now, gentlemen, we have all witnessed, at one time or other, cases where excessive zeal and enthusiasm on the part of an observer has so colored the report of his observations that work of otherwise real merit became worthless from a scientific standpoint. For this reason I would like to make a further report at some future time of cases which shall have been diagnosed and whose progress shall have been observed by members of this society. Accordingly, I would say that if any member of the society has an ambulatory inoperable or postoperative metastatic recurrent case upon which he wishes to observe the effects of this treatment, I should be very glad to work in conjunction with him.

3957 Sheridan Road.

WHAT SHALL WE DO WITH MEMBERS WHO CUT PRICES?

MEDICAL ETHICS, OR THE DUTY OF PHYSICIANS TO EACH OTHER *

O. C. CHURCH, M.D.
WOBURN, ILL.

Every physician should realize that his is a noble profession and that his success depends on several factors, viz., his ability, his tact, his personality and his opportunity. But a physician may have all of the above and yet be a failure. If he is surrounded by physicians of unscrupulous characters, unethical physicians who would say and do things to advance their own selfish interests and reflect on the ability of a brother physician, failure instead of success would be his lot even though he had all the essentials listed above. The medical profession is not what it should and could be. Whose fault is it? You all know that it is our own fault. If we expect the laity to say or do anything to advance our interests, we will never make any advancement. *That* is in our power to do if we will, through our medical societies and by personal interviews with offenders.

It is our fault that we make calls — both day and night — especially at night, when no human being should be away from his fireside. Too many physicians are afraid that if they don't go and make an almost impossible call, that some other physician will, so they conclude that they might as well go as the other fellow, who probably lives only half as far away. That's selfishness. That's a miserly disposition. When a physician can do so, he ought to suggest calling the nearest physician to assist, especially in fractures or confinements where an anesthetic is, or ought to be given, and thus favor the brother physician, and at the same time divide the responsibility.

If physicians were organized as they should be, they could have everything their way from a medical standpoint. I don't mean that they

* Read at the meeting of the Bond County Medical Society, Jan. 9, 1913.

should take undue advantage of their clients, not that. What I mean is that physicians should receive a fair and just compensation for their services. That every physician should strictly adhere to schedule prices agreed on by the society. That every case where a physician is known to cut prices, the case and the doctor's name should be presented and thoroughly discussed by the medical society of the county in which he resides. Also where a physician in a neighboring county violates the rules of another county, that physician should be reported either personally or in writing to the president and secretary of the county in which he, the offender, resides; then leave it to his society to determine the penalty. I have thought of writing a few lines to the offender himself, but hesitated, because I felt as though he might betray me to patrons in my own territory, and thus stir up enmity and ill will among those who should rightfully patronize me. Of course, a conscientious and ethical physician would not condescend to such tactics. The schedule prices in Bond County are not too high; in fact, they are very low when compared with prices in some other counties. Especially are they low when compared with the prices of other commodities which our patrons have for sale, and which we must buy at these advanced prices or do without. Then if our prices are low why make them lower by cutting and going from seven to ten miles on a confinement case for $10, when you would charge the same for crossing the street in a case of that kind. It has been reported and can be proven that doctors have made trips of seven miles for $3.50 instead of charging $4.50 or more, depending on the roads, weather and ability of the patient to pay.

I have a brother-in-law who lives four miles from Belleville, and in each of their three cases of confinement it has cost them from $25 to $50 (no forceps, either). An ordinary trip that distance costs them $5. I know of cases in Bond and Montgomery counties where doctors have gone ten miles on confinement cases for $10, and the same distance (ordinary sickness) for $3 and $3.50. I expect to charge schedule prices whether other doctors do it or not. I am going to treat my professional brothers right and at the same time my patrons too. Don't you have to pay market or schedule prices for everything you buy? Then are we unjust when we expect the same from others? I have no objections to other physicians being called to see my neighbors if they charge schedule prices. No, sir; they can come every day, and I will welcome them to my office. But it is a dirty, mean, sneaking trick to make such calls of a dollar or more less than schedule price, in order to appeal to them — yes, ask them in that way for their practice. Notwithstanding the fact that he had to go from seven to ten miles, when they have a recent graduate, a competent physician across the street.

Physicians ought to realize that when they undercharge they are doing themselves as well as other physicians an injustice. If people want a certain physician they will have him, even if they know it will cost them more.

Not long ago a man called at my office and inquired what I would charge for trips to his home in case he had sickness. I told him $2 (he

lives about 1⅛ miles from my office). He said, "Well, I used to pay $1 a trip and sometimes $1.50, but never $2." I told him I had charged others that price for going that distance and I could not consider charging him less. He said, "Now, that is your price and you would be willing to sacrifice my practice rather than go for less?" I said, "Yes, sir." I told him that if he had sickness and had more confidence in some other doctor than he had in me, he would send and get him regardless of the cost. He said, "Yes, I believe I would." I said, "You would do that even if I went for nothing." I then told him that if he had confidence in me, and thought I could do the work, he would not stand back for fifty cents more than he had ever paid before. He saw the point and I expect to do his practice.

During small-pox in Woburn, I was asked what I would charge to visit several homes for the purpose of ascertaining whether or not small-pox existed in those homes. I said, "Two dollars for each home visited." I informed the proper authority that $1 was the regular fee in Woburn, but I could not expose myself and family to a contagious disease at the ordinary rate. I was told that if I would go for the ordinary rate I could go. I said, "No, it will cost $2 per house." I was told they would see about it and let me know later. The next day I was ordered to visit those homes and at my price, which was very reasonable.

A director of a certain school asked what I would charge to vaccinate all the children at the school house. I told him fifty cents a piece. He thought it was too much and that twenty-five cents was enough. He said if I would do it for twenty-five cents a piece to go ahead. I told him it would cost each one fifty cents, but where there were three or more to be vaccinated in a family that I would make a difference to that family. I lost the job, but will never miss the money.

A few months ago I was called to a certain family four miles distant, and charged them $3. I knew, however, that they tried to get me before, but could not, so they called another doctor seven miles distant. I asked what he charged them, he said $3. Now that doctor might as well have had $4.50 as $3.

Another way that doctors cut prices is by charging from twenty-five to fifty cents for a diagnosis and medicine included. A physician's knowledge of what the patient needs is worth fifty cents to the patient, and the medicine is worth from twenty-five to fifty cents additional, making seventy-five cents or $1 in every case for office practice.

Dr. A. was located at ———— for about twenty-five years; he seldom charged over fifty cents for medicine at the office regardless of how much the patient carried away. He seldom charged over $10 for confinements, and made several after-trips regardless of the distance to the patient. These after-trips were included in his fee of $10. He charged $1 a trip in town (day), and the same at night. You say he was foolish and made a mistake, and that is quite true. In all of these instances he could and should have received more. Well, he became dissatisfied and left the town without a doctor. In less than sixty days another doctor went in there and made the following charges: Confinements, $15, instead of $10, and no after-visits; visits in town,

$1.50, instead of $1; night, $2; medicine at office, $1, invariably. These prices are true, no guess work, as I stayed with this doctor awhile, and nothing under $1 was ever put down. I say, gentlemen, it is our fault, and this fault is due to jealousy, envy, thoughtlessness and selfishness in our brother physicians.

A letter from Dr. ———— of E. St. Louis states that their custom is to charge as much as the patient can pay, and then to take as much as he will pay. Let us not only talk about doing something, but actually do it.

If our fee bill will stand revising, let us revise it. If it is all right the way it is, let us all live up to it and quit cutting prices, thereby showing our worthiness to be listed among ethical physicians.

THE DOCTOR'S PSALM OF LIFE

What the Heart of the Old Practitioner said to the Young Doctor

Tell me not, in mournful numbers,
Practice of medicine is a dream;
That the doctor always slumbers,
And things are easy as they seem.

Practice is real! Practice is earnest!
Charity, really, is not its goal;
For the doctor often finds it
Hard to earn his winter's coal.

With hours long, no duty shirking,
And with heart both stout and brave,
Night and day he keeps on working
To hold some mortal from the grave.

In the world's broad field of battle
He has learned what 'tis to trust;
Found most people worse than cattle;
Never paying till they must.

Trust no patient, howe'er pleasant,
Sing! O sing this little song;
PAY! PAY in the living Present,
Divy up as we go long.

Great collectors all remind us
We can make our lives more bright,
And, departing, leave behind us
Gold for which our heirs will fight.

Let us then be up and doing,
This one thing to recollect;
The good old dollar still pursuing,
LEARN TO LABOR AND COLLECT.

With apologies to H. W. Longfellow.

Bacillus Poeticus. A. G. Bosler.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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APRIL, 1913

THE CASE OF FRIEDMANN

A great deal of misunderstanding prevails among the laity as to the attitude of the profession toward Friedmann's alleged cure for consumption, and the ethics of the profession are being roundly abused by the newspapers who seem to delight in slandering medical men. Under the circumstances it becomes important for our members to know exactly what the attitude of the profession is. The best plan, as we know, to get a new treatment before the world is that which was adopted by Professor Ehrlich in connection with salvarsan. Instead of making a public display as Friedmann has done, Professor Ehrlich submitted his remedy to a number of prominent clinicians, who were requested to keep absolute silence regarding the value of the remedy until its worth was positively demonstrated. When this was proven to the satisfaction of all concerned the remedy was put on the market without any great public demonstration, and the value of the preparation remains to this time about the same as when it was put on the market.

It is not believed that any of the glory or emolument of the discovery was lost to Professor Ehrlich by this course, and it is altogether probable that had Dr. Friedmann pursued a similar course his reward would have been the same, if his remedy is valuable.

He might well have taken also an example from Thomas Edison, who delayed more than a year in placing the kinetaphone before the public.

Edison wished to be absolutely certain of the perfection of his discovery before he gave it to the world. Of course, no lives of innocent and confiding people were in the balance, as in the case in giving out an alleged cure for disease.

Apparently, Friedmann is acting a very small part in this alleged discovery and will reap the just reward of selfish promotion.

We are sure that the medical profession only hope that the Friedmann remedy may be of value in the treatment of consumption, but Dr. Friedmann's course is certainly open to great criticism. Should it prove to be of less value than Friedmann claims, the profession would be roundly abused had it taken up "the cure" without investigating and lent its aid in deceiving the public.

Friedmann's methods of advertisement are being widely imitated. The very latest is by Dr. Peter P. Duket, formerly of Toledo, Ohio, and recently of Chicago, who, under the auspices of Wm. Lorimer and certain members of the faculty of the Bennett Medical College, has announced a cure which he is administering at Grace Hospital, Chicago.

DR. DAVID LIVINGSTONE

March 19 was the centennial of the birth of David Livingstone, the Scotchman, one of the best examples of manhood ever produced by any country, and one of the most creditable representatives of the medical profession since the beginning of time. The anniversary of his birth was widely celebrated in all English-speaking countries, and in these busy selfish times it is well for the medical profession to remember the devotion to duty, self-sacrifice and courage of this great man. Throwing aside all thought of personal comfort he prepared himself for the great work of a missionary, and so well did he perform his duties that an entire continent which had, since the creation, remained a danger spot both physically and morally, was put in the way of redemption and development.

It is only now that the full meaning of Livingstone's work is being appreciated. The high character of the man should never be forgotten, and no better text-book on the ethics of the medical profession could be placed in the hands of the young graduate than a well-written, truthful life of Livingstone. His heart was buried in Africa by faithful converts, his body lies in Westminister Abbey, where it was placed, accompanied by the tears of Great Britain and America.

THE MADSTONE

In another column will be found an inquiry regarding the madstone from Dr. O. C. Church, a young practitioner of Greenville, Bond County. Dr. Church graduated two years ago. There may be other novices in the medical profession who are just learning to try their wings in medicine and fly from the popular superstitions and ideas which prevail among the laity, and for this reason we undertake to answer that a madstone is defined a good deal like a mascot. Webster says, *a madstone is a stone*

popularly supposed to counteract the effects of poison from the bite of an animal. Thus you have it in a nut-shell, except that the madstone may not be a stone, or it may be any kind of a hard substance of a stony character. Several things it always possesses, and that is a marvelous history of how it has been handed down from generation to generation; of how it always sticks to the person bitten by a mad animal, and never to any other person; of how it has never failed to cure the afflicted, and finally of how much cash value it has been to the owner who is kind enough to have it tried on every person simple enough to believe in its wonder working properties.

It is remarkable how tenaciously the laity continue their belief in these hoary fakes. It is not only the ignorant and superstitious who believe in them, on the contrary many who should know better, swallow the bait. It will probably be 11:45 p. m. of the last day about one hour after the final cataclysm that some unfortunate refugee will appear with a charm guaranteed to put out the fire. Answering the doctor's other question we might say that the madstone is always porous and dry and sticks to a moist surface a good deal like a new clay pipe stem sticks to the lips of the smoker.

BROUGHT TO BOOK IN IOWA

Daniel Orr Schiller of Rockford, to whose illegal practice we called attention in the February issue of the JOURNAL, was arrested at Cedar Rapids, Iowa, March 18, convicted of practicing medicine without a license and presumably fined for this offense. The following account from the Dubuque *Telegraph-Herald* gives further information regarding this man, who undoubtedly left the state of Illinois with a large bundle of money. He did not prosper very well, it seems, in Iowa. Illinois is the easy state, and had not the JOURNAL taken a hand in exposing this man, he would still have been swindling the people of the Sucker State.

Along this line is the case of one S. C. Brown, traveling under the name of "Dr." C. W. Davis, who was arrested at Galesburg, March 19, and found to have over $500 in his possession obtained by the sale of a medicine for the eye, said to contain charcoal and flour. How long will the people and profession of Illinois stand for this sort of highway robbery.

"Dr." Schiller came to Cedar Rapids and opened up an office. He advertised extensively and gave many testimonials, supposedly from well known persons in this vicinity. His patients flocked in from miles around, each with his or her particular ailment and the necessary ten dollar bill. Schiller did a thriving business until County Attorney Linville put a stop to the proceedings.

On the witness stand Schiller claimed he had taken a correspondence course from a school of "Newology" in Los Angeles and had been ordained as a minister and divine healer by a bishop from Peoria, Ill. The ordination took place in Rockford.

RESOLUTIONS OF THE COUNCIL OF THE CHICAGO MEDICAL SOCIETY

Resolved, That it shall be unethical for any member of the Chicago Medical Society to treat free, in any institution, any patient known to be able to pay.

Resolved, That the Committee on the Abuse of Medical Charities be authorized to get the cooperation of all hospitals and dispensaries in the installation of uniform system of records in all such institutions as shall be declared to be ethical.

Resolved, That the Chicago Medical Society urge on the county that appropriation be made for the pay of the medical attending staff of all its institutions.

Resolved, That a specific sum be set aside for the use of the Abuse of Medical Charities Committee, and that no bills be paid therefrom without the consent of the Trustees of the Chicago Medical Society.

—From the *Bulletin,* Chicago Medical Society, Feb. 15, 1913.

Resolved, That no patient shall be given any treatment, except in emergencies, in any institution, without a statement from the family physician or the physician who previously treated the case that such patient is unable to pay, or who shall decline to furnish an affidavit to the effect that he is not able to pay.

WHEREAS, Certain members of the Chicago Medical Society and the American Medical Association are so prominent and their surgical achievements are so remarkable that they cannot avoid unethical publicity, such as has been manifested in recent newspaper and magazine articles, while the other members are debarred by the recently adopted code of ethics from bringing their modest merits to public notice by paid advertising; be it

Resolved, That the Council of the Chicago Medical Society recommend, in the interest of fair play and consistency, that Section 4, Chapter 2 of the Code of Ethics of the American Medical Association, reading as follows: "Solicitation of patients by circulars or advertisements, or by personal relations, is unprofessional. It is equally unprofessional to procure patients by direct advertisements, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable," be so modified as to permit as far as possible, more general distribution among the profession of the opportunities for public notice; and be it

Resolved, That this preamble and resolution be published in the next issue of the *Bulletin* and be given for publication in the ILLINOIS MEDICAL JOURNAL and the *Journal A. M. A.*

From the *Bulletin,* Chicago Medical Society, March 22, 1913.

DEATH OF DR. J. A. EGAN

Dr. J. A. Egan, for sixteen years secretary of the Illinois State Board of Health, died at his residence in Springfield, Sunday, March 30, 1913; aged 53 years. Dr. Egan, at the time of the conference between Governor Dunne, the officers of the State Medical Society and the members of the State Board of Health, recently held in Springfield, was seen

to be in a state of extreme nervousness, and it was evident to a close observer that his vital forces were much shattered. From this time until the end came he gradually lost strength and died from uremia, having only been confined to his room one day. His death will probably lead to the reorganization of the health department of Illinois in the very near future.

An interesting family of five children who have been deprived of both parents within three years will receive the sympathy of the entire medical profession.

OSTEOPATHS AGAIN ACTIVE

The osteopathic "rubbernity" numbering about 250 adherents in the state have again had the presumption to place a bill for an act to regulate the alleged practice of that cult in the 48th general assembly. This was introduced by Mr. Thomas N. Gorman of Peoria and will be referred to the committee on judiciary when appointed. We believe the bill as printed is contradictory, misleading and void. However, this should not stop our friends from getting busy at once to prevent the consideration of this bill even by the committee. If the committee on judiciary should be appointed before the JOURNAL for this month goes to press we will insert the names, and ask all our readers to communicate with these gentlemen in opposition to this bill. Should the appointment of this committee be too late for us to print the same this month, the legislative committee will get busy by letter and otherwise to make a demonstration of the opposition of the medical profession on this subject.

For the present we refrain from referring to the particulars, but we can easily demonstrate that the bill is a vicious and dangerous one.

BIRTH AND DEATH BOOKKEEPING

Under this title the Association of Life Insurance Presidents recently issued an excellent pamphlet of some fourteen pages. The subject matter refers to the registration of births and deaths in a thoroughly practical manner from the standpoint of a layman and a good citizen. A diagram on page thirteen shows that Illinois ranks nearly the bottom in the whole union, and far behind its neighboring states.

On reading this pamphlet we wrote the following letter to the headquarters in New York City, and are glad to know from the answer which was soon received, that our suggestion to place a copy in the hands of the members of the 48th general assembly, met with favor and will be carried out. His letter shows that the whole country is commenting on the delinquency of Illinois in sanitary and health administration and legislation.

The address of the association is No. 1 Madison Avenue, New York City, and no doubt any member of the state society wishing a copy of this pamphlet will be supplied on application to Mr. Cox, the general counsel and manager.

SPRINGFIELD, ILL., March 21, 1913.

Association of Life Ins. Pres., No. 1, Madison Ave., New York City.

Gentlemen:—I beg to acknowledge receipt of your pamphlet entitled "Birth and Death Bookkeping." This is a very valuable publication and because of the very backward condition in the State of Illinois in this important matter, I would suggest that a copy of this pamphlet be sent to every member of the Forty-Eighth General Assembly now convened in this city. If you do not have the names of the members I should be glad to supply you with them.

NEW YORK CITY, March 24, 1913.

To the Editor:—I have your letter of the 21st inst. and am pleased to know that you can commend our pamphlet on "Birth and Death Bookkeeping." It was in fact prepared very largely with the Illinois situation in mind, though we have used it so far mainly in other states, where registration laws have already been passed this year.

We expect to place this in the hands of your legislature, and thank you for the suggestion. It is encouraging to know that you believe it will be helpful.

Yours very truly,

ROBERT LYNN COX,
General Counsel and Manager.

SPECIAL TRAIN TO THE AMERICAN MEDICAL ASSOCIATION MEETING

The St. Paul Railway has arranged to run a special train for the exclusive accommodation of members of the Illinois Medical Society and their friends who will attend the national meeting to be held in Minneapolis next June.

The equipment will be composed of drawing room, standard sleeping cars, buffet library car and dining car. Every car in the train represents the highest standard of construction. The St. Paul sleeping car has that distinctive comfort feature, the "longer, higher and wider" berth. For one hundred miles the railroad and the Mississippi River run a collateral course.

The Illinois State Medical special train will leave Chicago, 6:35 p. m., June 16, and arrive Minneapolis 7:45 a. m., the next morning. The rate for a double lower berth, Chicago to Minneapolis is $2; for a double upper berth, $1.60.

For reservations on this train, write Geo. B. Haynes, G. P. A., Chicago, Ill. Dr. E. W. Weiss, Secretary, Illinois State Medical Society, Ottawa, Ill.

BILL AGAINST FEE SPLITTING

Honorable Medill McCormick of Chicago has introduced a bill to prevent fee splitting by physicians and surgeons. A similar bill known as the Woodward Bill has passed the House of Representatives in Missouri. The Missouri bill fixed a fine not to exceed $500 for every offense, and the violation of the law is also punishable by revocation of license. The fact that both of these bills were introduced by laymen is quite significant. Who would say that they should not be passed?

ECCENTRIC AND AGED DRUGGIST DIES

Hiram G. Farrell, for fifty years or more a druggist in Peoria, Ill., and for that length of time one of the best known citizens, died at the home of his daughter, Mrs. Charles Siegfried, at Newport, Rhode Island, January 23.

The deceased was over 90 years of age. In his later years his mental faculties were somewhat clouded, although to the last he maintained a firm grip on his business affairs. One of his peculiarities was that he insisted that his agent in Peoria pay the rent and keep possession of the old drug store in the 100 block Main Street, that he operated so many years, and which formed the basis of his fortune. The building in which this store stands is just as Farrell left it years ago. The windows are so dirty that it is almost impossible to see through them. The old fashioned fixtures and the huge stove which furnished warmth for generations of patrons still stands as it did. The bottles and packages still stand on the shelves, but they are laden down with a thick coating of dust.

All efforts on the part of his family and his business agent to induce him to give up this unprofitable bit of property proved unavailing, and he insisted that it stand as he left it.

Farrell was born in Mt. Pleasant, Pa., about the year 1820. His father, Robert Farrell, was at one time a member of the Pennsylvania State Assembly and was a man of some consequence in his community. He came to Peoria with his wife and children some sixty years or more ago. He had four sons, all of whom became either physicians or druggists. Dr. John Farrell was the oldest, William G. was next, Hiram G. came next, and the late Clinton Farrell, also well known in Peoria for half a century, was the youngest. The Farrell drug store was opened some time in the fifties.

GOOD ROADS RESOLUTIONS

The Committee on Public Relations wishes to report a request asking for cooperation of the Medical Society and the County Medical Societies for the passing of a Bill for Good Roads that is now before the Legislature.

At the present time, the world over, the subject of good roads is a live and important topic. No member of the community, whether urban, suburban or rural, should have more interest in good roads and a keener desire for the betterment of our highways than the physician.

Good roads extend his practice, widen the sphere of usefulness and increase both the comfort and safety of his daily journeying. Good roads, too, increase the safety of his patients, for in many an emergency the speed with which a call can be answered will determine the question of life or death. Therefore, be it

Resolved, That the Chicago Medical Society extend to the people of the state, its hearty cooperation in their efforts to ameliorate, as soon as

possible, this one of the many hardships to life in the rural districts, and which works a special hardship to the life of practitioners who have a rural clientele. Be it further

Resolved, That the Chicago Medical Society indorse the platform of the Illinois Highway Association, adopted at Peoria, Ill., Sept. 27, 1912. That we do everything within our power to assist the members of the General Assembly to put on the statute books of Illinois a good roads law; and be it further

Resolved, That these resolutions be published in the *Bulletin* of the Chicago Medical Society and the ILLINOIS MEDICAL JOURNAL, and that a copy of these resolutions be sent to every member of the Legislature from Cook County.

Moved, seconded and carried that the resolutions be adopted.

Council of the Chicago Medical Society, March 11, 1913.

EXAMINATIONS FOR THE ATTENDING STAFF OF COOK COUNTY HOSPITAL

The Cook County Civil Service Commission will hold examinations for Attending and Associate Physicians for the various departments of the Cook County Hospital at 547 County Court House at 7 P. M., on the following dates:

To fill eighteen positions in the department of Medicine, April 3.

Four positions in Nervous and Mental Diseases, April 4.

Six positions in Contagious Diseases, April 5.

Six positions in Children's Diseases, April 7.

Eight positions in Tuberculosis, April 8.

Eighteen positions in Surgery, April 10.

Four positions in Skin and Venereal Diseases, April 11.

Four positions in Obstetrics, April 12.

Four positions in Gynecology, April 14.

Four positions in Ear, Nose and Throat Diseases, April 15.

Four positions in Eye Diseases, April 16.

Four positions in Orthopedics, April 17.

Four positions in Pathology, April 17.

Those desiring to take any of these examinations must make their applications on blank forms which will be sent by the Commission on request and file them with the Commission not later than 12 M. of the day next preceding the date for which the examination is called. The appointments are for six years.

The hospital treated last year over 34,000 patients. The patients will be grouped in the departments into services of about fifty beds each in permanent locations. One attending and one assistant physician are

assigned to a service. As soon as possible, promotional examinations will be held for a chief in each department, who will be responsible for the general organization and control of his department.

The attending physicians are required to attend at the hospital three days each week at least two hours each day, while the associate physicians must attend at least two hours each day five days every week. Both attend continuously with an allowance of three months' vacation each year.

The scope of the examination will be, special subject, 6; experience, 4. In the marking of experience the nature of the position makes academic and medical school education, service as an intern, in general practice or in practice of a specialty, post-graduate work, hospital and dispensary work, original research work, important contributions to medical literature and teaching advantageous to the applicant.

Correspondence

THE DOCTORS "NOT GUILTY"

To the Editor:—A little more than a year ago a 9-year-old boy died in the office of Drs. Hill and Housh, in East St. Louis, while being operated on for phymosis under chloroform anesthesia. The circumcision had been practically done, only two stitches being required to complete it, when the respiration suddenly ceased. The usual measures were immediately adopted for maintaining the respiration and the heart action, but these were unavailing and the boy was not revived. Some time after this the parents brought an action for damages in the sum of $10,000 against the doctors, but the case was dismissed at the request of the plaintiff's attorney. Later a second case was brought into court and tried on its merits resulting in a verdict in favor of the defendants.

In the trial of this case it was shown that chloroform is recognized as the anesthetic of choice in children under ten years of age; that the statistics showing that ether is the safer anesthetic do not show that it is safer for the particular class of patients to which this patient belonged; that it does not take into account the deaths occurring later from the "ether pneumonia," nor those from "nephritis" caused by the ether; but only those dying immediately while under the anesthetic. These facts, being clearly established by competent witnesses, resulted in such instructions from the trial judge that acquittal was the only verdict which could be rendered that could stand.

While Drs. Hill and Housh are to be congratulated on the results of the trial it is still more a recognition of the well-known fact that deaths during any operation, no matter how simple it may appear, are unavoidable, and are part of the "risk" which the patient must assume.

C. W. Lillie.

STATE SOCIETY MEMBERSHIP

MEDICAL SOCIETY OF THE STATE OF NEW YORK
January 14, 1913.

Dear Doctor:—I have read with great interest your letter in which you say that it is proposed to make New York No. 3, with Illinois No. 1 and Pennsylvania probably No. 2. Now I do not think that is a nice spirit to start the year 1913 with. I, however, beg to say that whenever you beat New York, New York will take its hat off, and in addition to that, if we can help you in any way to beat us, by increasing your membership we will do it, but just remember that Yours Truly and a few others can also get busy and by the time you are through with your increased membership ours will be so much larger than it is to-day that you will look like thirty cents.

With lots of affection and kindest regards, I am,

Sincerely yours,

Dr. E. W. Weis, Ottawa, Ill. WISNER R. TOWNSEND,
Secretary.

VACANCIES IN U. S. MARINE CORPS

HEADQUARTERS U. S. MARINE CORPS
WASHINGTON, March 15, 1913.

SIR:—I have the honor to inform you that the Navy Department has directed the convening of Boards of Officers on Monday, July 14, 1913, for the purpose of holding competitive examinations of young men between the ages of twenty-one and twenty-seven years, for the purpose of filling the vacancies in the grade of second lieutenant, U. S. Marine Corps. These examinations will be held in Washington, D. C., San Francisco, Cal., and in other cities if the number of applicants will justify the expense involved.

The Marine Corps consists of 345 officers and 9,921 enlisted men, and is a component part of the naval service of the United States. The officers of the Marine Corps are on the same basis for pay, allowances, retirement, etc., as officers of the infantry, U. S. Army.

The commissioned strength of the Marine Corps is divided as follows:

	LINE	STAFF
Major General Commandant	1	..
Colonels	8	3
Lieutenant-Colonels	7	5
Majors	20	8
Captains	94	13
First Lieutenants	96	..
Second Lieutenants	90	..

There are at present fourteen vacancies in the grade of second lieutenant.

The pay of a second lieutenant is $1,700 per annum, with 10 per cent. additional for each five years' service. In addition there are certain allowances in the way of quarters, heat and light, or commutation thereof. The position, if secured, is for life, or good behavior, and officers com-

missioned as second lieutenants are in line for promotion to the higher grades as vacancies occur. Officers of the Marine Corps are required to serve at sea on vessels of the Navy, and on shore at naval stations in the United States or in its foreign possessions.

There is no appropriation available to advertise this opportunity to young men throughout the country, but it is suggested, should you consider it probable that among the readers of your paper there be young men likely to be interested in securing a commission, that you give such publicity as may be practicable to this matter. Full particular will be given upon application to the Major General Commandant, U. S. Marine Corps, Washington, D. C. Blanks will be furnished for formal application of those who desire to take this examination. Full information can also be secured at any Marine Corps Recruiting Office located in the cities given in the attached list.

Very respectfully, W. P. BIDDLE,
Major General Commandant.

THE NEW VITAL STATISTICS BILL

To the Editor:—It has just been announced that a new vital statistics bill, based on the model bill modified to meet the requirements in this state, has been introduced by Senator Cornwell, as Senate Bill 313. This bill is the product of the best thought of all the organizations of the state interested in child welfare. The Chicago Medical Society, the Legislative Committee of the Illinois State Medical Society and the Chicago Department of Health were actively represented on the committee which formulated it.

The provisions in this bill for securing reliable data on industrial diseases alone make it the best one that has ever been proposed to any legislature in the United States. If enacted it will place Illinois in the van of vital statistics legislation and will secure to the state data of the highest value both for the individual and for the public.

County societies would do well to endorse this bill and write to their representatives in its behalf without delay.

Sincerely,
CHARLES J. WHALEN, M.D.
ARTHUR M. CORWIN, M.D.
HENRY G. OHLS, M.D.

THE MADSTONE

GREENVILLE, ILL., March 15, 1913.

To the Editor:—Please print a brief history of the renowned madstone. State facts as to its merits in dog-bite. What makes or causes the madstone to stick on when applied to persons bitten by dogs?

Of course, I do not believe in madstones, but cannot answer the above question when put to me. Tell us all about the madstone in the April number—case in mind. Very much interested in this at this time.

Fraternally yours, O. C. CHURCH, M.D.

Special Articles

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

THE PROPOSED CHANGE IN NAME

GEORGE H. SIMMONS, M.D., LL.D.
CHICAGO

Explanatory Note:—This Abstract of an Address before the Conference of State Secretaries is republished from the American Medical Association Bulletin of Nov. 15, 1912, on the request of the Judicial Council. The House of Delegates referred the report of the Committee to Formulate Amendments to the Constitution and By-Laws to Extend Membership, presented at the 1912 Session (*Journal*, June 15, 1912, p. 1899) to the Judicial Council with power to confer with constituent Associations. The council, after careful consideration, endorses the proposed change and takes this means of bringing the subject to the constituent associations as well as directing to it the attention of the members.

I have been asked to discuss the present conditions of membership in the American Medical Association and the proposed change, which has been under discussion recently. While this is not directly related to the object of this conference, the discussion of uniform regulation of state membership, it is so closely connected with it that I cannot refuse to take advantage of the opportunity of discussing the question before such a large representation of state secretaries.

To get a clear understanding of what the present term "members" of the American Medical Association means, it is necessary to go back a little in the history of the Association.

The American Medical Association always has been a delegated body; only "delegates" ever had a right to take part in its proceedings.

"Permanent members" was a term originally applied to those delegates who connected themselves permanently with the Association after they had served as delegates. "Permanent members," however, had no rights except those of attending the meetings and taking part in the scientific work. In 1883, *The Journal* was started and the following year, for the purpose of increasing the circulation of *The Journal*, there was created another class: "Members by Application." A member of any so-called affiliated society could become a "member by application" simply by making application for membership and paying the annual dues. The difference between "members by application" and "permanent members" was that the latter had been delegates, whereas the former became members simply by making application. Neither "permanent members" nor "members by application" had vote or voice in business meetings.

MEMBERSHIP IN THE A. M. A. TO-DAY ON THE SAME BASIS AS THE FORMER "MEMBERS BY APPLICATION"

Briefly, we have the following situation:

1. The voting membership of the organization is the combined membership of all the 2,000 (more or less) component county societies,

amounting approximately to 70,000 members. These elect the delegates to the House of Delegates of the state associations; they in turn elect the delegates who form the House of Delegates of the American Medical Association. Before 1901, the delegates to the American Medical Association were elected, or appointed, by the "affiliated" societies, which included local, district and state societies. Since 1901, that is, since the reorganization, the delegates to the national body are elected not by local, district and state societies, but by the state societies alone.

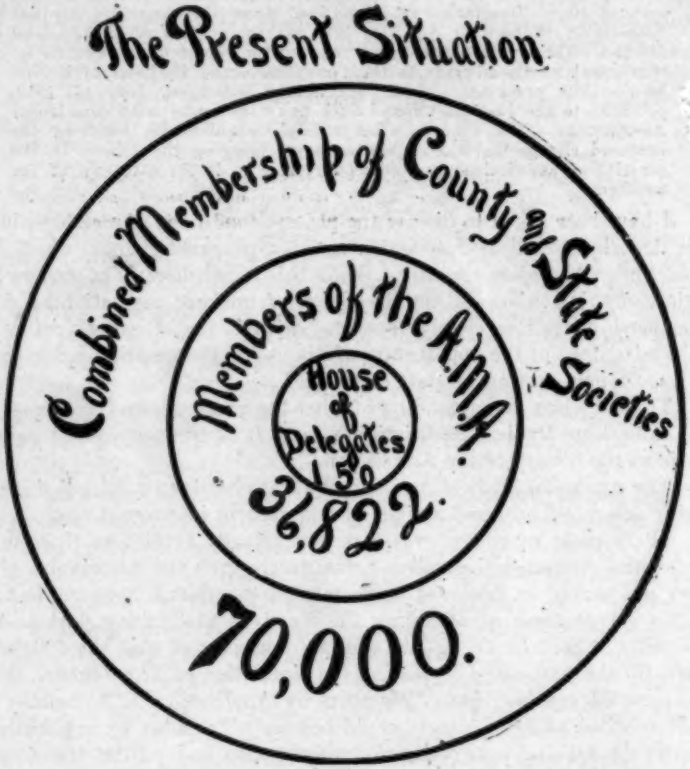


Chart 1

2. The so-called "members of the American Medical Association" are the direct successors of the old "members by application." By their payment of dues and their subscriptions to *The Journal*, they were and are to-day the supporting or contributing group of the members of the organization.

3. The House of Delegates is composed of approximately 150 members, who are elected by the various state Houses of Delegates, which are in turn composed of delegates elected by the members of the component county societies. The House of Delegates of the American Medical

Association, therefore, is created by, and represents the combined membership of all the county societies of all the states; it is not elected by, nor does it represent, the present "members of the American Medical Association" as such; it never has.

The result is that we have two classes which could be called members. First, the actual, logical memberships of 70,000, usually designated as "the membership of the organization." Second, the 36,822 contributing or supporting members, who are designated as "members," although these

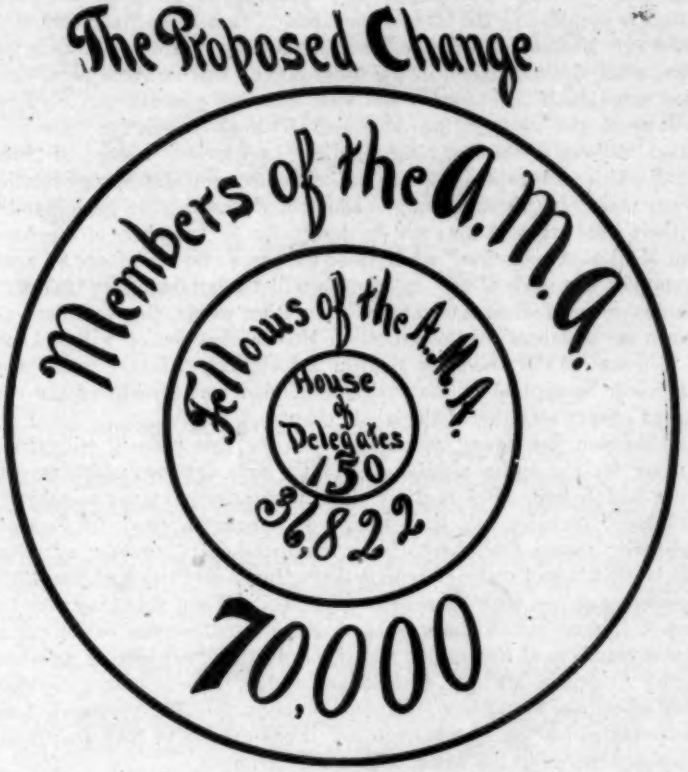


Chart 2

"members of the American Medical Association" have no more privileges than have all members of the organization, except the right to take part in section work. This present situation I have had shown on the accompanying chart (Chart 1). The membership of the American Medical Association, at present 36,822, is an inner circle of the membership of county societies, while the House of Delegates is a still smaller circle composed of those who have been elected to represent the members of the organization of the whole country.

Now the situation itself is perfectly logical and is in every way to be recommended. The trouble is that we have not named our groups accurately. Those whom we now call "members of the American Medical Association" are really those members of the organization who, in addition to supporting their county and state associations, also contribute to the support of the American Medical Association, while for the actual membership of 70,000 members we have no distinctive name.

The change that has been proposed is not a change in condition at all. It is simply a change in name. It is proposed to designate the 70,000 members included in the large outer circle (Chart 2) as "members of the American Medical Association," which they really are and always have been, while those included in the inner circle (that is, those members in good standing of their county and state societies, who also pay $5 a year to support the work of the American Medical Association) are to be called "fellows of the American Medical Association" instead of "members." This will make no change in the membership standing or relations of any man. If this suggestion is adopted, all members in good standing in their state organizations will be designated as "members of the American Medical Association," while those members who contribute $5 a year to support the work of the Association will be designated as "fellows of the American Medical Association." In other words, those who are now known as "members" of the American Medical Association will be known as "fellows" of the American Medical Association, while the term "members" will be applied to the entire, combined membership of the component county societies of the whole country.

This plan has several advantages. In the first place it will give us a name for the entire membership of the organization, which we have never had before. Before 1901 they were referred to as members of "affiliated" societies, and since then they have been called, for lack of a distinctive name, "members of the organization." Another advantage will be that it will make clear that the voting power lies with the 70,000 members and not with the 36,822 "fellows." When this plan was first proposed, some got the impression that the intention was to compel the 70,000 members of the county societies to become "supporting members" of the American Medical Association, as the term is now understood. This, of course, would be a ridiculous proposition. The proposed change contemplates leaving membership conditions exactly as they are; it contemplates changing the name, and not the relation.

One great disadvantage prior to the reorganization of the American Medical Association in 1901 was the fact that we had no name by which to designate the delegates. As soon as the name "House of Delegates" was adopted, then the function of the delegates became clear at once. The Association also has labored under the disadvantage, ever since its reorganization, that there has been no name by which to designate the actual voting membership, because the term "members" had been applied to the supporting body. The proposed change simply recognizes this fact, designating as "members" those who really are members, and designating the supporting members as "fellows."

I have already given some reasons for making the change, but there is another and more important; in fact, it is the paramount reason. Up to the present time, the members of the organization have not realized that they are, in reality, members of the American Medical Association. They regard the American Medical Association as something entirely apart from them, something in which they have no interest. These members of the organization are through their elected representatives responsible for what the American Medical Association is doing, or what it ought to do and is not doing, but they do not realize this, hence they are not interested. They do not appreciate that the House of Delegates of the American Medical Association, which they elect, is the body that is doing the work through the officers, trustees, councils, etc., which they, through their representatives in the House of Delegates of the American Medical Association, select. While only a change in name, I think the subject is of the utmost importance. I hope that all of you will look into it carefully, so as to understand exactly what is intended, and then will explain it to your members at the first opportunity.

THE SPUTUM ALBUMIN REACTION IN TUBERCULOSIS*

J. B. ROGERS, PH.C., M.D.
From the Laboratory of the Edward Sanatorium
NAPERVILLE, ILL.

Recently the sputum albumin reaction in tuberculosis has attracted much attention. Fullerton,[1] Works,[2] Scott,[3] Brown and Ross,[4] Fishburg and Felberbeaum,[5] Fishburg,[6] Raw,[7] and others, having made reports. In an effort to determine the value of the reaction, at the suggestion of Dr. Theodore B. Sachs, Medical Director of the Edward Sanatorium, I have made a study of the sputum albumin reaction in 115 cases at the sanatorium. In some of the cases a single test was made, but in the majority of cases a series of tests were made during a period of several months.

Technic.—Several methods were tried. One giving fairly satisfactory results is as follows: The sputum is collected in a wide-mouth bottle with tight-fitting cork; to the sputum is added an equal amount of 3 per cent. solution of acetic acid—bottle stopped and thoroughly shaken and set aside for one-half hour, then filtered and to filtrate collected in a test-tube, add a few crystals of sodium chlorid, heat, then set aside and note whether or not there is a precipitate of albumin.

Results.—Of the total number of cases examined, 73 per cent. gave a positive albumin reaction. Of sixty-nine open cases (tubercle bacilli in

1. J. R. Fullerton, Glasgow Medical Journal, lxxciii, No. 1, 79.
2. B. O. Work, J. A. M. A., Oct. 26, 1912.
3. A. R. Scott, J. A. M. A., Feb. 8, 1913.
4. L. Brown and W. H. Ross, 7th Annual Meeting National Assn. for Study and Prevention of Tuberculosis.
5. Fishberg and Felberbeaum, Medical Record, Oct. 28, 1911.
6. Fishberg, Archives of Diagnosis, July, 1912.
7. Raw, British Medical Journal, Dec. 2, 1912.

sputum) sixty-two gave a positive albumin reaction; seven open cases, and showing distinct physical signs, gave negative albumin reactions; fifteen closed cases (sputum negative for bacilli), but showing physical signs, gave a positive albumin reaction; thirty-one closed cases, twelve of which showed physical signs, gave negative albumin reaction. It was noticed that in the active cases, the sputum showed a larger amount of albumin than in the inactive cases. It was also noticed that in some cases a positive albumin reaction became negative as the patient improved, or increased as the disease progressed. These results may justify the conclusion that the sputum albumin reaction, when taken in conjunction with other signs and symptoms of tuberculosis, is of some value in diagnosis and in determining the activity of the tuberculous process.

Preliminary Program

ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY AT PEORIA, MAY 20, 21 AND 22, 1913.

THE FIRST DAY

1. *Status of Vital Statistics in Illinois and Our Obligations.* T. H. D. GRIFFITTS, State Board of Health, Springfield, Ill.

History of vital statistics measures in Illinois. Results obtained. Sanitary application of the information obtained. Should have statistics to show the actual rate of dying—an index to sanitary conditions and an efficiency check on measures directed toward the conservation of human life. Birth statistics to enable most comprehensive campaign against infant mortality. Present conditions; hopes for the future. Legislative enactment is not the only prerequisite. Our professional, legal and moral obligations.

2. *Report of a Case of Transplantation of Bone for Ununited Fracture of the Right Tibia with Remarks on Osteogenesis.* J. E. ALLABEN, Rockford, Ill.

Double fracture of right tibia, lower third and middle; simple fracture of right fibula at the middle. Three months later the fracture of tibia at lower third being ununited, it was wired. Came under writer's care seven months later still ununited. A piece of bone was transplanted from left tibia into the ununited portion of right tibia. Now twelve months since transplantation, new bone has filled the space (¾ inch) between ends of fractured bone. Good functional result. Presentation of *x*-ray photographs showing fractures and different stages of new bone formation. Presentation of patient. Brief discussion of the new theory of Wm. Macewen, F.R.S., Glasgow, on growth of bone.

3. *Sporotrichosis in Man.* W. W. HAMBURGER, Chicago.

4. *Some of the Rarer Fractures About the Wrist Joint.* D. B. Phemister, Chicago.

Variation in location and type of fracture with age; folding fractures, epiphyseal separations: sprain fractures. Barton's and reversed Barton's fractures; fractures of the carpal bones.

5. *A Clinical Research on the Surgery of the Upper Abdomen.* A. D. BEVAN, Chicago.

The report of a group of cases in which a definite anatomical diagnosis was made from the clinical findings before operation, and a comparison with the conditions actually found at operation, showing some of the difficulties in the way of differential diagnosis between lesions of the bile tracts and liver and those of the stomach, duodenum and pancreas. A claim that this work may be made the highest class of research and a plea for the general adoption of this method.

6. *The Early Identification of Tuberculosis of the Lungs.* SUMNER MILLER, Peoria.

The successful treatment of tuberculosis of the lungs depends on its early application. The diagnosis at a stage earlier than moderately advanced or advanced tuberculosis is not made by a large number of physicians. Only the specially trained physician identifies the meager findings of incipient tuberculosis. Past experience demonstrates that we cannot expect early diagnoses from many physicians. The establishment of a clinical instead of an anatomic standard for incipient tuberculosis of the lungs would enable every physician to give all cases the advantage of early treatment: i. e., cough, malaise, temperature and loss of weight constitute a syndrome sufficient for the institution of appropriate treatment under the characterization "Incipient suspect."

7. *Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis with Cases.* E. A. GRAY, Chicago.

History. Action on diseased lung. Conditions for operation. Indications for operation. Technic. Collapse versus compression complications. Dangers. Effect of long continued compression and collapse. End results. Cases already reported. Author's cases.

8. *The Present Status of the Treatment of Tuberculosis.* J. W. PETTIT, Ottawa.

9. *Three Score Years and Ten.* C. B. JOHNSON, Champaign.

10. *Nephroptosis.* W. E. SCHROEDER, Chicago.

Relation to hydronephrosis. Experimental production of hydronephrosis. Pathologic changes in kidneys of dogs. Clinical course and diagnosis with special reference to the early diagnosis with the use of collargol and *x*-ray. Operative treatment.

11. *Oration in Medicine.* JOSEPH COLLINS, New York.

12. *X-Ray Manifestations of Gastro-Intestinal Motility.* C. A. ELLIOTT, Chicago.

13. *An Experimental Study with Intestinal Suture Materials.* G. T. COURTNAY, Chicago.

1. The amount of reaction with different suture materials—microscopic and gross. Specimens from dogs illustrated.

2. The relative strength of the line of suture, using various materials, as evidenced under pressure.

3. Clinical deductions as borne out by the foregoing work in some cases in the human subject.

14. *Heredity and Epilepsy—A Plea for the Colonization Treatment of the Epileptic.* D'ORSAY HECHT, Chicago.

15. *Motion Pictures Illustrating Various Nervous and Mental Diseases.* THEODORE H. WEISENBURG, Philadelphia, Pa.

SECOND DAY

1. *A Simple Method of Preparing Catgut.* E. M. SALA, Rock Island.

2. *Treatment of Hemorrhage in the New-Born.* MARK T. GOLDSTEIN, Chicago.

Case reports, both personal and of other authors. Etiology as it now stands. A history of the treatment up to date with a comparison of the different procedures in the treatment. The effect of the latter and the present-day treatment on the patient.

3. *The Results in Abbott's Method of Treatment in Scoliosis.* J. L. PORTER, Chicago.

The radical difference between Abbott's method and any other. The reason for the new departure as regards position of the patient. Conditions influencing the prognosis. Résumé of results in fifty-five cases.

4. *A Consideration of 200 Cases of Traumatic Injuries of the Abdomen.* FREDERIC A. BESLEY, Chicago.

The paper deals with deductions and conclusions drawn from an analysis of 200 cases of abdominal injuries treated at Cook County Hospital. Thirty of the cases were diagnosed as simple contusions of the abdominal wall. It is intended to show from this analysis that many of these abdominal injuries are not regarded as serious until too late to apply successful surgical therapy and a plea is made for an earlier abdominal section in the doubtful cases.

5. *Benzol in the Treatment of Leukemia.* FRANK BILLINGS, Chicago.

The author will give in a brief retrospect the literature on benzol as a drug in the treatment of leukemia. He will give further details from cases already reported under this treatment and of other cases still under treatment. The astonishiing effect of the drug on the blood picture and on the spleen will be noted; the possible great value of tne drug in the treatment of the leukemias and its possible danger as a poisonous agent if used in too large amounts or over too long a period of time.

6. *Operative Treatment of Ununited Fractures with Contracture of the Attached Muscles.* P. B. MAGNUSON, Chicago.

1. When to operate.
2. How to prepare for operation.
3. The instruments necessary to successfully operate on bones.
4. Stretching of muscles; discussion of methods.
5. Holding the fragments; discussion of methods.
6. After-treatments; cast or extension, or both.

7. *Mitral Stenosis Complicating Pregnancy.* S. E. MUNSON, Springfield.

1. Examination before or during early months of pregnancy may not disclose this lesion.
2. Early symptoms.
3. Non-appearance of symptoms until late in pregnancy.
4. Importance of frequent heart examinations as a routine during pregnancy.

8. *Displacements of the Colon.* CARL E. BLACK, Jacksonville.

This paper will report two cases of displacement of the colon and call attention to the conditions which favor displacement as well as some of the prominent symptoms, which may lead the practitioner to at least suspect the existence of a displacement of the colon. In one of these cases chronic diarrhea was the most prominent symptom, while in the other case obstinate constipation was equally prominent. Special emphasis will be placed on the use of the *x*-ray in defining the position of the colon.

9. *Oration in Surgery.* CHARLES L. SCUDDER, Boston.

Stenosis of the pylorus in infancy. What are the indications for medical and surgical treatment? A lantern demonstration of congenital pyloric stenosis.

10. *The Physician and the Defective.* C. B. CALDWELL, Lincoln State School, Lincoln.

11. *Obstruction of the Bowel.* CLIFFORD U. COLLINS, Peoria.

12. Motion Pictures.

13. *Vital Statistics and Water-Supply.* MR. PAUL HANSEN, Engineer State Water Survey.

14. *Care and Feeding of Infants Among the Poorer Classes.* C. G. GRULEE, Chicago.

EYE, EAR, NOSE AND THROAT SECTION

The following list of men have been invited to contribute to the forthcoming meeting of the Eye, Ear, Nose and Throat Section of the State Medical Society:

NOSE

R. J. COULTOS.....Mattoon, Ill.
C. W. GEIGER.....Kankakee, Ill.
J. A. PRATT.....Aurora, Ill.

The Etiology of Hypertrophic Rhinitis.

THROAT

R. C. MATHENY.....Galesburg, Ill.

Dysphonia

F. W. BRODRICK.....Sterling, Ill.

EAR

ROBERT I. BULLARD.....Springfield, Ill.
NORVAL H. PIERCE.....Chicago, Ill.
G. H. MUNDT.....Chicago, Ill.

Subjective Tests for Hearing.

J. HOLINGER.....Chicago, Ill.
A. H. ANDREWS.....Chicago, Ill.

Surgery of the Antrum.

L. OSTROM.....Rockford, Ill.

EYE

H. W. WOODRUFF.....Joliet, Ill.

The Rôle of the Tarsus in Trachoma.

C. B. WELTON.....Peoria, Ill.

A Report of the Examination of the Eyes in General Paralysis of the Insane, in a Series of Fifty Cases.

W. R. FRINGER.....Rockford, Ill.
J. G. YOUNG.....Pontiac, Ill.
C. D. WESCOTT.....Chicago, Ill.
H. GRADLE.....Chicago, Ill.

Urotropin in Ophthalmic Practice.

H. ACHARD.....Chicago, Ill.

Vaccines and Serums in Ophthalmic Practice

C. A. WOOD.....Chicago, Ill.

Operations in Glaucoma.

There will be operative clinics, one half-day (first day), also a "get-together dinner" the first evening. papers will be read on the second day.

THE COUNTY SECRETARIES' MEETING

MAY 20, AT 3 P. M.

1. *Organization*.....L. H. A. NICKERSON, Quincy, Ill.
   President of the Illinois State Medical Society.
2. *A Booster Sermon*.....ROCK SLEYSTER, Waupun, Wis.
   Secretary of the County Secretaries' Association of Wisconsin.
3. *Cooperation*.....ALEX. A. CRAIG, Chicago, Ill.
   Secretary of the American Medical Association.
4. *Medical Jurisprudence and Malpractice*..W. F. BURRES, Urbana, Ill.
   Member Illinois State Legislature.
5. *The County Society Bulletin*...E. W. FIEGENBAUM, Edwardsville Ill.
   Editor of the Original County Secretary's *Bulletin* in Illinois.
6. *The Ideal Secretary*.....T. D. CANTRELL, Bloomington, Ill.
   Secretary of the McLean County Medical Society.

PEORIA RAILWAYS TIME TABLE

C. & A.—North. "Chicago Line."

Leave		Arrive
r12.01 a.m.		r 7.00 a.m.
r 7.15 a.m.		r 1.35 p.m.
r 8.00 a.m.		r 3.30 p.m.
r12.40 p.m.		r 9.25 p.m.
r 2.45 p.m.		r10.30 p.m.

Peoria-Dwight Division.

r 8.00 a.m.		r 9.55 a.m.
r 2.45 p.m.		r 9.25 p.m.

C. & A.—South.

r 7.02 a.m.		r 9.15 a.m.
s12.10 p.m.		s 2.15 p.m.
r 7.00 p.m.		r 8.15 p.m.

BIG FOUR.

r 7.25 a.m.		r 7.10 a.m.
r11.30 a.m.		s10.30 a.m.
s 4.05 p.m.		r 2.45 p.m.
r 8.00 p.m.		r 6.37 p.m.

ILLINOIS CENTRAL.

r 7.30 a.m.		r11.30 a.m.
r 5.45 p.m.		r 6.10 p.m.

T. P. & W.—East.

r12.01 a.m.		r 7.00 a.m.
r 7.15 a.m.		r 9.55 a.m.
r 8.00 a.m.		r 1.40 p.m.
r12.40 p.m.		r 3.30 p.m.
r 2.45 p.m.		r 9.25 p.m.
r 6.30 p.m.		r10.30 p.m.

T. P. & W.—West.

r 7.40 a.m.		s 9.00 a.m.
s12.20 p.m.		r11.20 a.m.
r 4.27 p.m.		s 6.15 p.m.
		s 9.00 p.m.

C. R. I. & P.

r 8.00 a.m.		r 6.40 a.m.
r 1.00 p.m.		r 1.25 p.m.
r 5.00 p.m.		r 6.20 p.m.
r12 01 mid.		r10.00 p.m.

ROCK ISLAND LINE.

r 7 55 a.m.		r11.25 a.m.
s 2.55 p.m.		s 4.35 p.m.
r 6.55 p.m.		r10.55 p.m.

VANDALIA.

s12.50 p.m.		s10.40 a.m.
s 5.45 p.m.		s 1.30 p.m.

M. & ST. L.

Leave		Arrive
s 7.32 a.m.		r10.59 a.m.
r 3.30 p.m.		s 6.50 p.m.

L. E. & W.

r 7.00 a.m.		r11.15 a.m.
s11.55 a.m.		s12.20 p.m.
s 4.30 p.m.		s 3.35 p.m.
s 5.30 p.m.		r 8.30 p.m.

C. P. & ST. L.

r 8.00 a.m.		r10.55 a.m.
r12.15 p.m.		r 2.55 p.m.
s 4.45 p.m.		s 6.15 p.m.
s 6.00 p.m.		s 9.10 p.m.

C. B. & Q.

s 7.15 a.m.		s 6.45 a.m.
r 3.00 p.m.		r12.10 p.m.
r 7.10 p.m.		r 6.45 p.m.

C. & N. W.

r 5.02 p.m.		r11.52 a.m.

P. & P. U.

Depart.		Arrive.
r 6.20 am	r 2.30 pm	s 7.05 am s 2.25 pm
s 6.30 am	r 3.38 pm	r 7.40 am r 3.22 pm
r 7.45 am	s 5.00 pm	s 8.17 am r 4.32 pm
r 8.05 am	r 5.15 pm	r 9.00 am s 5.42 pm
r 9.10 am	s 6.05 pm	r10.02 am r 6.28 pm
r10.20 am	s 6.30 pm	r11.15 am r 7.38 pm
r11.33 am	r 9.20 pm	r12.32 pm r10.20 pm
r 1.00 pm	r11.23 pm	r 1.55 pm r12.27 am
s 1.30 pm		

r Daily s Daily except Sunday s Sunday only

PEORIA AND PEKIN TERMINAL.

Leave Chestnut and S. Wash. St. every half hour between the hours of 5.45 a.m. and 11.45 p.m. (leaving on the quarter-hour).

ILLINOIS TRACTION SYSTEM.

Leave for Bloomington-Decatur.

x 5.25 am	v10.10 am	v 2.10 pm	v 6.10 pm
v 6.00 am	x11.15 am	x 3.15 pm	x 7.15 pm
x 7.10 am	v12.10 pm	v 4.10 pm	x 9.20 pm
v 8.10 am	x 1.15 pm	x 5.15 pm	x11.15 pm
x 9.15 am			

Leave for Springfield-St. Louis.

v 5.00 am	v10.00 am	v 2.00 pm	v 6.00 pm
v 8.00 am	v12.01 am	v 4.00 pm	v 8.00 pm

v11.30 pm Sleeper Train

x Local. v Limited.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The Adams County Medical Society held its monthly meeting March 10. The attendance was very small, but our doctors are busy. A communication was read from Dr. George N. Koker, chairman of the American Medical Red-Cross Committee. The society declared itself heartily in favor of cooperating with the American Red Cross and for this purpose appointed a committee consisting of the president, secretary and Drs. Center, Ericson and Pearce. Eight physicians were elected to membership, namely: E. D. Brown, Clayton; J. F. Ross, La Prairie; Everett N. Sykes, Beverly; W. Frank Snider, Liberty; J. Lenne Aleshire, Plainville; Albert Garner, Tioga; A. W. Meyer, Quincy; W. J. F. Reiffert, Quincy.

This was to have been a joint meeting of the Illinois State Dental Society, but owing to the inability of the speaker for the dental society to be present, the joint meeting was postponed until the evening of March 27. At this meeting a paper will be read by Dr. D. G. Stine of Quincy, whose subject will be "A Discussion of the Influences that Diseased Conditions of the Mouth, Nose and Throat Have on the Individual's Welfare, and a Consideration of Their Relation to the Community's Health."

ALEXANDER COUNTY

The Alexander County Medical Society held its regular monthly meeting Thursday, February 20, in the Commercial Club Rooms, Cairo. An unusually large number attended.

Dr. W. F. Grinstead of Cairo presented the history of an interesting case of abdominal tumor in a woman aged 40 years that resembled a pregnancy. On attempting to examine the perineum he found an opening only the size of a lead pencil. This had been made by the obstetrician at the time of birth. He opened backward about an inch and was then able to reach with his finger a fecal mass. This was removed and found to weigh two and a half pounds. This caused the tumor to disappear. An imperforate rectum was then discovered anterior to the small opening. A new anus was made by opening the two into each other.

The subject for the evening was "Epidemic Cerebrospinal Meningitis." Dr. C. E. Duncan of McClure, who had recently gone through a severe epidemic, presented the "Symptoms and Course" of this disease. The disease had been very fatal as he had seen it. Altogether there had been twenty cases with sixteen deaths and one recovery so far. There were still three cases under treatment, one only of which he expected to recover. The serum treatment had been used in about half the cases. Though the death-rate had been so high he believed in the specific treatment; it was the only thing that had the power of modifying the course of the disease.

Dr. Flint Bondurant discussed the "Etiology." Ill health and insanitary surroundings were predisposing causes. The specific cause the diplococcus intracellularis. He exhibited under the micrscope two slides showing the bacilli in the cells.

Dr. J. M. Gassaway of the local Marine Hospital presented the subject of "General Treatment." While there was nothing in this that was directly curative, much could be done to support the patient and tide him over.

Dr. J. T. Walsh discussed the subject of "Prophylaxis" in an able way, after which the subject was opened for general discussion. In this Drs. A. A. Bondurant, O. B. Cary, R. E. Barrows and others joined.

The application of Dr. C. E. Duncan, Dr. McClure and Dr. R. E. Barrows all of Cairo, were then considered and all were voted into membership.

CHAMPAIGN COUNTY

The Champaign County Medical Society held its regular meeting February 13, at Champaign. Dr. Cleaves Bennett read a paper on "Pleural Effusion" and cited some interesting cases to illustrate the various causes and also the different types of effusion. An attack of measles as a factor in starting up a dormant tuberculosis, and early serous pleural effusion followed by a rapidly developing general tuberculosis was described as a type that is often repeated. Drainage for most cases was advised and all points of the surgical procedure were described.

Dr. E. G. Davis read a carefully prepared paper on the "Complications of Pneumonia." This list of otitis media, brain abscess, pericarditis, endocarditis, arthritis, gastro-enteritis, nephritis and abscess and gangrene of the lung is formidable.

Dr. Yantis spoke on the "Peculiarities of Influenza," and first mentioned its inexplicable modes of travel: the sudden onset of grip in places where it had not been known to exist; the infection of many people simultaneously who had for days or weeks been isolated from the world, as on ship board; the possibility of the so-called "victims" constantly harboring the germs, and the seeming transmission of the infection against the usual rules governing the spread of contagions. The influence of influenza in the production of a systemic depression that predisposes toward pneumonia, tuberculosis, neuralgias about the head and organic nerve troubles attaches to this disease an all around bad name.

Plans for a public meeting in March were discussed and President Gulick appointed Drs. W. K. Newcomb, Stanley and Yantis to make definite plans and arrangements. The president instructed a committee, Drs. McKinney, Burres and Wall, to investigate the present status of contract practice in the county with the view of determining whether in any case the requirements of corporations are in conflict with the by-laws and fee bill agreed to by our members.

Nineteen attended this meeting and we had as visitors Dr. Beard of the University and Dr. Morton of Rantoul.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Feb. 5, 1913

A regular meeting of the Chicago Medical Society was held Feb. 5, 1913, with the following program:

1. "Presentation of a Case of Cervical Rib." George W. Hall.
2. "Experiences in Ductless Gland and Brain Surgery, with Presentation of Cases." Illustrated with lantern slides. Allen B. Kanavel.

Regular Meeting, Feb. 12, 1913

The evening of February 12 was devoted to a banquet in honor of the ex-presidents of the Chicago Medical Society. The proceedings were abstracted in the JOURNAL for March, page 309 *et seq.*

Regular Meeting, Feb. 19, 1913

A regular meeting of the Chicago Medical Society was held Feb. 19, 1913, with the following program:

1. "Some Original Uses of Bone Transplantation. A Report of 120 Cases." (By invitation.) Fred H. Albee, New York City.
2. "Ligneous Phlegmon of the Abdominal Wall." (By invitation.) W. W. Grant, Denver, Colo.

Regular Meeting, Feb. 26, 1913

1. "Pediatrics. General Medicine and the Public." (By invitation.) A. Jacobi, New York, President American Medical Association.
2. "The Approach to the Kidney and Ureter." (By invitation.) Edward Martin, Philadelphia.

Regular Meeting, March 5, 1913

1. "Diagnosis and Treatment of Enlarged Thymus in Children." Illustrated by lantern slides. (By invitation.) Alfred Friedlander, Cincinnati.

Regular Meeting, March 12, 1913

1. "A New Method of Treating Trigeminus Neuralgia by the Direct Injection of Alcohol into the Gasserian Ganglion." Julius Grinker.
2. "The Dressing and After-Care of Herniotomy Wounds in Infants and Small Children." Coleman G. Buford.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

Regular Meeting, Nov. 19, 1912

A regular meeting was held on Nov. 19, 1912, at the Bismarck Restaurant, with the President, Dr. Joseph C. Beck, in the Chair.

PRESENTATION OF CASES

Dr. G. A. Torrison: E. S., aged 68 years, engineer, had been troubled for the past week with difficult and painful deglutition. He had entered the Presbyterian Hospital a year ago, where a diagnosis of Hodgkins' disease had been made. Family history was negative. He denied having had syphilis. Inspection of the throat showed an enormously enlarged left tonsil, which reached nearly over to its fellow on the opposite side. The latter was normal in size. There were enlarged glands in the left side of the neck. The surface of the enlarged tonsil was smooth and presented a reddened and glazed appearance, suggesting a large tonsillar abscess. An incision gave no pus, the knife entered a cavity which proved to be an enlarged crypt. The probable diagnosis then lay between sarcoma and a tonsillar manifestation of Hodgkins' disease, the latter being the more likely.

Dr. J. Holinger: The patient was a painter, aged 32 years. He has suffered from acute otitis media for the last five days, with very copious discharge. There was a tit-shaped perforation in the region of Shrapnell's membrane. The perforation of Shrapnell's membrane is always due to a chronic process, says Bezold. Politzer, on the other hand, insists that he saw perforations in this part in acute inflammations. This case seemed to be an argument in favor of Politzer's theory. Dr. Holinger slit the tit and to-day, two weeks after the demonstration, the tit has disappeared and the perforation was in the posterior upper quadrant. The swelling and the pus must have moved the soft parts. So the case supports Bezold's contenton.

Dr. Otis H. Maclay presented a case of suspected tubercular destruction of the nasal cavities, the turbinate tissues entirely gone, much crusting, some odor, bony surfaces exposed in various regions of the nose. Antisyphilitic treatment had been tried without apparent benefit; for the last two months has been under injections of tuberculin, with decided improvement.

RESONATORS, WITH SPECIAL REFERENCE TO THE SCHAEFER APPARATUS

ROBERT SONNENSCHEIN, M.D.

Resonators are appliances which have the property of selecting out and reenforcing certain sounds. Resonance is the reenforcement or intensification of sounds due to the union of direct and reflected waves. Resonators have been used in various ways by different men, such as Helmholtz, Schaefer, Abraham, Wien, Wastzmann and others, for the investigation of many physical problems, among them the analysis of tones, especially the vowels, the study of "interference tones," etc. Although a very simple apparatus, such as a lamp chimney, a tube of cardboard, or a bottle, may serve as a resonator, still the best thing is either a spherical resonator or a mental cylindrical tube, both of which may be connected with the ear. If open at both ends, the pitch of a resonator is higher

than if one end is closed. On the other hand, a resonator is of deeper pitch (a) the larger the air-containing space and (b) the narrower the sound opening happens to be. Tones of medium pitch are the ones most intensely reenforced, the very low and the very high ones much less so.

The Schaefer set of resonators consists of four cylindrical brass tubes of different lengths, but the same diameter. One end is open, the other closed by a plate having a central aperture. Over the latter is a conical extension intended to be placed in the meatus auditorius, or to be connected with tubing for introduction into the ear. For occluding the small opening when the resonators are not to be inserted into the meatus, rubber plugs are provided. Each resonator tube fits accurately into another cylinder, but can be moved in and out. The inner tube is graduated in millimeters, and at the same time the tones for which the resonator acts at different lengths are indicated by letters giving the notes of the scale. The gradation corresponds to the tones of the temperate scale based on a′ (435 v. d.), at a temperature of 18 C. (about 64.4 F.).

The advantage of the Schaefer resonators seems to lie in their being compact, accurate, comparatively cheap and easily adjusted to any desired tone between A (108 v. d.) and c (1024 v. d.).

Conclusions: Resonators can be used for various purposes: 1. In physical research, in the analysis of tones, etc. 2. In testing tuning-forks to see if the actual tone is the one claimed to be present. 3. For determining the pitch of unmarked forks or that of any other sounding body whose tone comes within the range of the resonators employed. 4. And last, but not least, for testing the absolute duration of hearing for any tone or set of sounds.

DISCUSSION

Dr. Richard H. Brown asked whether, if you get a resonator tuned to about a medium pitch, such as a man talking in a very monotonous voice, that can be used by a person with diminished hearing, to catch enough of the sound vibrations to enable that person to hear better? He wondered if that had been tried.

Dr. J. Holinger did not believe that resonators have been used or tried for the purpose spoken of by Dr. Brown, and he did not believe that it would be feasible. The bulk of the resonators excluded their being carried around by a person. One important application, however, might be this: The resonators of the well-known span from c to g might be used in determining the degree of defect in hearing in children, in order to find out which deaf-mutes could be educated through their sense of hearing. If hearing extended over this well-known span and amounted to hearing the tuning-forks of this pitch for ten per cent. of their normal duration, hearing could be used for educating children.

Dr. Edwin Pynchon asked Dr. Sonnenschein if he had had any experience with the audiometer. This instrument had a little bell, the tone of which could be modified as desired by the examiner.

Dr. Sonnenschein, in closing the discussion, added a little to what Dr. Holinger had said in answering Dr. Brown's question. It would not be possible to use these resonators very well as an aid to hearing for the reason that, while it is true that the range not only covers the range given by Bezold, that is, from b^1 to g^3 (these go considerably lower than that—an octave, and also a full octave higher), we must remember that it is the over-tones in the various vowels that give the quality to the voice. Now, even though people speak in a so-called monotone, every vowel has certain over-tones, and each resonator will only resound to one particular tone when adjusted at a certain length.

So far as teaching deaf-mutes was concerned, which was referred to by Dr. Holinger, of course that is very important, but he thinks that the same remarks would apply, namely, that these resonators not only cover this area, but more than that. Regarding Dr. Pynchon's question about the audiometer, Dr. Sonnenschein has had no practical experience with it. It is an apparatus not for reenforcing sound, but for testing hearing by means of a hammer enclosed in a sounding-box, which is controlled entirely from the outside, so that the patient has no way of

judging what intensity of sound is being produced. This is connected with the ear by tubing as in a stethoscope. One can produce an intensity of sound from 0 to 10, and thus see when the patient begins to appreciate that sound.

Dr. Brown asked whether it is known what the actual difference of pitch is in the vowel tones in monotone talk.

Dr. Sonnenschein replied that even in a monotone the quality of speech depends entirely on the articulation and emphasis, whereas the specific tone would have to have the same pitch. Even if a person speaks in a monotone and pronounces different vowels, they are of different pitch.

Dr. Brown asked what is the difference.

Dr. Sonnenschein said he has forgotten the exact difference, but believes that Wolf showed that there is a range of almost three octaves in pitch of the various vowels and consonants.

THE PHYSIOLOGY OF THE SEMI-CIRCULAR CANALS. A LANTERN DEMONSTRATION

GEORGE E. SHAMBAUGH, M.D.

Dr. Shambaugh pointed out the importance of obtaining a correct idea of the anatomy of the end-organ in the semicircular canal, and the difficulties encountered in making preparations of these end-organs. The end-organ in the semicircular canals is the crista ampullaris, which forms a ridge placed so as to receive the full impact of the endolymph passing from the utricle into the canal or from the canal into the utricle. Both sides and the crest of the crista are covered by hair-cells. Superimposed above the crista is placed the cupola, which is separated by an appreciable space from the free surface of the epithelium. The hairs of the hair-cells project into the under surface of the cupola. The cupola is a stationary cap which is not capable of being displaced by endolymph currents.

ANALYSIS OF THE PHYSICAL REACTIONS WHICH PRODUCE A STIMULATION OF THE HAIR-CELLS OF THE CRISTA AMPULLARIS

1. The stimulation of the hair-cells is the result of an irritation applied to the projecting hairs.

2. The irritation of the hairs is brought about by an interaction between the cupola and the hairs.

3. This interaction is occasioned normally by the impaction of endolymph currents against the sides of the cupola.

4. Only those hair-cells on the side of the crista receiving the impact are stimulated by a current of endolymph.

Conclusions that are still unsettled in the analysis of these physical reactions are:

1. Is the duration of the stimulation of the hair-cells the same as the duration of the endolymph current?

2. Is the duration of the nystagmus the same as the duration of the endolymph?

Since we are able to observe objectively the duration of nystagmus, the answer to these questions can be approached by finding some way of estimating the duration of an endolymph current. Three methods are known by which the duration of the endolymph current can be estimated: 1. The Ewald experiment. 2. The compression test in fistula cases. 3. The fact that in caloric stimulation of the semicircular canal it is necessary, in order to get an endolymph current, that the canal be placed in a vertical position. The endolymph current which is occasioned in this way by caloric stimulation ceases the moment the canal is placed in the horizontal plane. In all three of these experiments we observe that the duration of the nystagmus produced by an endolymph current stops apparently the moment the endolymph current ceases.

PHENOMENA IN ROTATION EXPERIMENT

On starting rotation a patient develops a nystagmus in the direction of the rotation. After rotation has continued for some moments this nystagmus disappears. If the speed of rotation is now accelerated, the nystagmus will again return. On suddenly stopping rotation a nystagmus develops in the opposite direction, which also lasts for a number of seconds before subsiding. The simplest explanation for these phenomena was offered by Breuer and Crum Brown, who explained them as the result of inertia of the endolymph. Breuer gave up this idea later because of the difficulty in accounting for the inertia of endolymph in the small canals producing an endolymph current that would last long enough to explain the duration of the turning and after turning nystagmus. Breuer accepted the conclusions that both on starting and on stopping turning there can be but a momentary impulse to the endolymph. He still believed that the duration of the nystagmus depended on the duration of the stimulation of the hair-cells. In order, therefore, to account for the stimulation of the hair-cells lasting long enough to explain the duration of nystagmus in the rotation tests, Breuer assumes that the momentary impaction of endolymph displaces the cupola. This displacement of the cupola produces a stimulation of the hair-cells that continues until the cupola has been drawn back to its normal position. Barany's explanation for the rotation phenomena is that there are two nystagmus centers, each containing stored energy which requires just so much time to become expended after stimulation. One center produces nsytagmus toward the right, the other toward the left. Barany believes that there is but a momentary impulse to the endolymph on starting and on stopping rotation. This produces a momentary stimulation of the hair-cells. The impulse on starting rotation stimulates the center which produces nystagmus toward one side and the impulse on stopping rotation produces stimulation of the center which directs nystagmus toward the other side.

Fundamental objections to both the Breuer and Barany hypothesis are the experiments cited above where in the fistula test and in the caloric stimulation the nystagmus stops the moment the endolymph current stops. If either the Breuer or the Barany hypothesis were correct, the first impact of endolymph in both of these tests should produce a nystagmus which would continue for some moments after the endolymph current ceased.

Other phenomena in the rotation experiment are that the maximum after-nystagmus is obtained after about ten rotations, and that a shorter after-nystagmus is obtained when we rotate a patient a shorter or a longer time, and the fact that after a prolonged rotation in certain individuals there is not only a shorter after-nystagmus, but when this dies out there develops a nystagmus directed toward the same side as the turning nystagmus, a so-called after-nystagmus. These phenomena are not accounted for in Breuer's theory, nor can they be explained with Barany's hypothesis. They are explained, however, as phenomena of fatigue from over-stimulation if we accept the theory that the duration of the nystagmus is dependent on the duration of an endolymph current.

ORIGIN OF LABYRINTH TONUS

The phenomena of labyrinth tonus can be intelligently understood only by keeping in mind the following facts in the physiology of the semicircular canals: 1. An endolymph current stimulates only the hair-cells on the side of the crista receiving the impact. 2. An endolymph current in one direction in a canal produces stimulation of the muscles which direct nystagmus toward one side; an endolymph current in the opposite direction stimulates the muscles which direct nystagmus toward the other side. In each semicircular canal the stimulation which results from an endolymph current which directs nystagmus toward the same side is greater than the stimulation from the endolymph current which directs nystagmus to the other side. In other words, in each crista impulses from the hair-cells on one side produce nystagmus in one direction, and impulses from the hair-cells on the other side produce a nystagmus in the opposite direction, the stronger impulses coming from those hair-cells which direct nystagmus

toward the same side. Labyrinth tonus is the result of impulses constantly emanating from the hair-cells on both sides of each crista. From each labyrinth, therefore, tonus impulses emanate which tend to produce nystagmus toward both sides, but since the stronger impulses are those which produce nystagmus toward the same side, the tonus from a labyrinth, if unchecked by corresponding impulses from the opposite labyrinth, will always produce nystagmus toward the same side. The stimulation of the hair-cells which produces tonus impulses is probably occasioned by the intralabyrinth pulsations associated with each beat of the heart. Any unilateral increase in the pulsations would tend to increasse the tonus from a labyrinth which would disturb the normal equilibrium and produce a nystagmus directed toward the same side. This condition is observed clinically in cases of labyrinth congestion occasionally associated with acute otitis media; also in most cases of serious labyrinthitis where the congestion of the labyrinth appears to be the most important change. In the severer types of serous labyrinthitis it has been observed that during the onset and during the later stages of recovery there is a spontaneous nystagmus directed toward the same side, produced apparently by hyperemia in the labyrinth. During the height of the process, when the serous exudate is sufficient to paralyze the action of the hair-cells, the labyrinth tonus in this labyrinth is suppressed, and for a time spontaneous nystagmus is directed toward the normal side.

In cases of diffuse suppuration of the labyrinth the spontaneous nystagmus is directed toward the normal side, because now the normal tonus from this labyrinth is unchecked by impulses from the diseased labyrinth.

ORIGIN OF COMPENSATORY TONUS AFTER DESTRUCTION OF THE LABYRINTH

The disturbance of equilibrium which follows the suppression of labyrinth tonus when one labyrinth is destroyed rapidly disappears because compensatory tonus develops to take the place of the tonus from the destroyed labyrinth. Tonus impulses to the voluntary muscles have two sources: (1) Tonus from the labyrinth, and (2) tonus from extralabyrinth afferent impulses. The sudden destruction of a labyrinth destroys permanently the labyrinth tonus from this side and at the same time apparently suppresses temporarily much of the extra-labyrinth tonus to the same muscles. In the recovery from the disturbed equilibrium which follows the sudden destruction of a labyrinth the first process is the return of the extra-labyrinth tonus impulses which the sudden shock temporarily suppressed. The next step is a compensatory increase in the extra-labyrinth tonus to balance the tonus from the normal labyrinth, and, finally, in this readjustment there often appears to be a compensatory increase in those impulses from the normal labyrinth which tend to produce nystagmus toward the opposite side. It is only in cases of long standing labyrinth destruction, where the tonus impulses from the normal labyrinth which direct nystagmus toward the opposite side apparently increase so as to balance tonus impulses which direct nystagmus toward the same side; in other words, when the impulses from the hair-cells on the two sides of the cristae are equal. When the tonus impulses from the hair-cells on both sides of a crista are equal, then the after-nystagmus in the rotation tests will be as strong toward the defective as toward the normal side. This has only been observed in cases of long standing unilateral labyrinth destruction.

DISCUSSION

Dr. Richard H. Brown believes all of the explanations he has heard, and, so far as he followed Dr. Shambaugh, his explanation, also, presupposes that in rotary nystagmus we have a motion circulation in the canal—take the horizontal canal as an example. If this canal were commensurate with the head, it would be a circle of some four inches in diameter, revolving around its center, but in fact this canal is a little thing of about one-quarter inch or less, and revolving at the end of a radius of some two inches. It seems to him that, revolving in that way, we would have a centrifugal action, the fluid tending to force itself to the outermost circumference and circulating through all of the different canals to the outer part. He would suggest that if some ingenious man could make a

pair of glass labyrinths, enlarged, and fill them with fluid containing a floating pigment, then mount them on a bar of perhaps four feet in length, in exactly the same relation, and rotate them, as in a centrifuge, and then stop them, he could observe the actual play of the pigment in the glass index. Thus far the theories advanced have never seemed convincing to him.

Dr. E. R. Lewis of Dubuque, Iowa, believes all the members present were greatly in Dr. Shambaugh's debt for the presentation of this very admirable discussion. He wished particularly to say one thing: When Dr. Shambaugh presented this matter some year and a half ago, he could not accept as plausible his idea that nystagmus in one direction was caused by the influence of the cells on one side of the crista, and nystagmus in the other direction was caused by the influence of the cells of the other side of the crista. At that time the doctor did not bring out the point that in this conception the cells on one side exceed in their impulse value the cells on the other side; and the objection which he raised at that time, that this theory was untenable when we consider that nystagmus is produced by the influence of the cathode, which stimulates *all* the cells *equally* at the same time, was, he thinks, valid. But now that Dr. Shambaugh has explained that he considers the cells, for instance, in the anterior vertical canal on the utricular side of higher value than the cells on the canal side, and the cells on the canal side of the horizontal of higher value than those of the utricular side, the objection which he raised is satisfactorily disposed of. He thinks Dr. Shambaugh's theory not only plausible, but very acceptable.

Regarding what the essayist said about the influence of the extra-labyrinthine tonus in comparison with the influence of labyrinthine tonus: He thinks there is a great deal to suggest that the relative value of the extra-labyrinthine tonus is very great. Consider, for instance, that while awake, whether in sitting or standing still, the opposing groups of skeletal muscles are evenly balanced in their contractions, by reason of the tonogenetic current from the afferent impulses, but when we commence to lose consciousness we commence to fail to perceive afferent impulses and, coincidentally, our muscle tonus begins to diminish. With the onset of sleep in sitting position, for example, which gives the pull of gravity a chance to exert its influence on the upright head, the first evidence of that diminution of tonus is the nod. The muscles which have held the head upright unconsciously, by reason of that muscle tonus, are relaxed. It cannot be due to labyrinthine tonogenesis *alone*, because in the very nature of things labyrinthine tonus impulses must go on while asleep as well as awake. It has to do, therefore, with apperception, and if tonogenesis were overwhelmingly of labyrinthine origin, that is, if the amount of tonus impulses emanating from the labyrinth overwhelmingly out-measured those emanating from other extra-labyrinthine sources, we would not find muscle tonus beginning to diminish when we commence to lose consciousness, and atony commensurate with and coincidental with unconsciousness.

Dr. George W. Boot said there is one law in nystagmus which he has never seen mentioned, and which will help in remembering the directions, namely: Nystagmus is always in the opposite direction to the current in the endolymph. While he thinks Dr. Shambaugh is undoubtedly right with reference to tonus from the labyrinth, namely, that the pulsations of the heart give rise to the greater amount of tonus, he believes that a great deal results from sound waves. The semicircular canals are in such intimate relation with the auditory portion of the labyrinth that sound waves which stimulate the cochlea are almost certain to stimulate to some extent the end organs of the semicircular canals. A good illustration of this tonus is in the action of our muscles when some unexpected noise occurs, for instance, when writing, if an unexpected noise occurs, there is a break in the writing. It is the same phenomenon which makes you hold your breath when you see a person walking in a particularly dangerous place. You do not make a sound because if you did the sound waves would increase the tonus of his muscles and the greater contraction of the stronger muscles would disturb his balance and cause your friend to fall.

Dr. J. Gordon Wilson was sure that the members all agreed in acknowledging their indebtedness to Dr. Shambaugh for the interesting discussion and the way in which he placed before them some of the problems involved in the physiology of the labyrinth. His only regret is that the essayist tried to give too much. The subject bristles with difficulties which one would like to discuss at length. Many questions suggest themselves. For instance, the one raised by Dr. Boot—the relation of hearing to the tonus labyrinth. There is no doubt at all in Dr. Wilson's mind of this relationship. He has frequently observed in animals, after one labyrinth had been destroyed, that stimulation of the other ear by sound waves would immediately cause that animal to show a reaction indicating stimulation of the labyrinth. We are all agreed that the labyrinth is one of the most important peripheral organs for tonus, but at present he finds great difficulty in accepting Dr. Shambaugh's hypothesis regarding its origin. In discussing tonus it ought to be made very clear that we know tonus chiefly through its increase or diminution; and that of the tonus which exists when the body is at rest, the continuous tonic reflexes, our knowledge is very indefinite. We know that mechanical irritation of the labyrinth and of its nerves will produce alterations of tonus. Also, from observations on the muscles—especially the eye muscles—we must conclude that when the body is at rest there is also an influence constantly going from labyrinth to these eye muscles. But where does this tonus originate, and how is it caused? Brauer believes it originates in connection with the otoliths. Ewald believes it is produced by cilia movement. There is also the physical pressure theory, under which head one may class such an hypothesis as that of Sydney Scott, who looks for an explanation in the heart's action. To all these serious objections can be urged, which it would take too long to discuss. At present we must conclude that as to how and where this permanent reflex is produced we have not sufficient knowledge.

Dr. Shambaugh suggests that the hair-cells play an important part in the production of tonus by pull or by pressure. We do know that in the horizontal canal of birds movements of endolymph toward the ampulla cause movements opposite to and greater than those from ampulla to canal. But this exists only for the horizontal canal, and is the reverse in the superior. We would require to suppose, on Dr. Shambaugh's hypothesis, that reversal has occurred in the structure of the ampullae in the two canals, of which we have no anatomical knowledge. An easier explanation would be an hypothesis in regard to the nerve distribution to these parts along lines he has indicated elsewhere.

Dr. Wilson cannot agree with Dr. Shambaugh that the compensatory action of the tonus comes from the other ear. Rotation after one side labyrinth destruction speaks against such a hypothesis. In animals—for instance, the dog—destruction of the labyrinth results in definite torsion of the head, which is permanent, though the animal recovers from the destruction nystagmus in two or three days. So there are certain muscular actions for which he never compensates, and some for which he does. Now, if the other labyrinth is destroyed, within a short time the head readjusts itself. Here the second labyrinth has not compensated, but may have played some part in preventing the compensation. In such cases he cannot see how the phenomena are to be accounted for by a compensatory mechanism lying in the simicircular canals. On the other hand, positive evidence pointing to the cerebrum as being the seat of the compensation has been given in a recent paper by Wilson and Pike (The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and their Relation to the Motor System), read before the Royal Society of London in June, 1912, and published in their *Transactions*.

There are one or two points in all discussions on the physiology of the labyrinth that ought to be clearly understood. One is in regard to the so-called currents of the endolymph. It is unfortunate that the word current is used for movements of the endolymph in the semicircular canals. Currents are unthinkable. What probably occurs is an alteration in pressure. This view finds expression in the new generally accepted Brown-Mach-Brauer hypothesis.

Again, what comes primarily from the labyrinth is not the nystagmus or double movement, but a deviation, which corresponds to the slow phase in the

ocular movement. The quick phase in the ocular movement is extra-labyrinthine, and one of the points still in dispute is where it originates.

The paper by Dr. Shambaugh was full of information and its interest is increased by the fact that he drew most of his references from man, the ultimate test to which all our experimental work must be applied. In animals we can perform more definite lesions than is possible in man, and, watching their outcome, can arrive at data which we can apply to pathologic conditions in our special work. We strive to bring these experimental and pathologic conditions into agreement. Whether they agree or not, we are ever hopeful that the outcome will be a clearer conception than we now have of the physiology of the labyrinth.

Dr. Boot said that both Dr. Shambaugh and Dr. Wilson spoke of the greater sensitiveness of the cells on one side of the crista, but did not offer any suggestions as to why this should be. Barany has given a possible explanation, namely, that the nerve supply on one side of the crista may be greater than on the other.

Dr. J. Holinger mentioned some experiments published more than ten years ago by Dr. Fischer, in connection with what Dr. Wilson said. Dr. Fischer destroyed one labyrinth completely in a dog. The dog was very sick for a few days, but recovered after about six or seven weeks. Then the other labyrinth was destroyed. After this the dog was sick again, though more seriously, and recovered much more slowly than from the first operation. Then he took other dogs and destroyed a certain part of the cortex of the brain, behind the Rolandic fissure. The dog showed no direct result from this destruction. When, however, in this dog he destroyed one labyrinth, the dog did not recover, and was unable to stand on his feet again. It would have died of inanition if it had not been fed artificially. That would mean that this part of the cortex is capable of taking the place of one labyrinth, because if that part of the cortex was not destroyed the dog would recover. How does that agree with the theory of peripheral tonus?

Dr. Shambaugh, in closing, said that Dr. Brown raised the question, whether the centrifugal force might not work to check a motion of the endolymph in the canals, especially since these canals are located at some distance from the pivot of rotation. This question has been brought up before, and he believes there is no difficulty at all in accounting for the motion of the endolymph in a mechanism of this sort. Dr. Brown also suggested the construction of a model to demonstrate exactly what the reactions are in the semicircular canals. This, of course, is the ideal, if it were only possible to construct such a model, but even if it were possible to devise a model that would resemble approximately the semicircular canal mechanism, such a model would be lacking in the finer membranous structures which no doubt influence decidedly the physical reactions resulting from rotation. He cannot see how one could possibly construct a model that would be of any assistance in this problem. The same question has come up in connection with the action of the membrana tectoria, and it has been suggested that one must devise a model which will demonstrate how the membrane tectoria responds to sound impulses. Of course, it is out of the question to construct such a model, since in the first place we don't know exactly what the physical properties of the membrana tectoria are, and, in the second place, even if we did know what these properties are, the mechanism is entirely too delicate and intricate to permit of imitation. Ewald at one time constructed a model in which he placed a taut rubber membrane, which was devised to illustrate the response in the membrana basilaris to the impulses of sound waves. This glass model permitted Ewald to photograph the vibrations of this rubber membrane, as it responded to tones of different pitch. Ewald argued that this illustrated the manner in which the membrana basilaris responds to sound waves. This work of Ewald's attracted a great deal more attention than it deserved. There is no more resemblance between the model constructed by Ewald and the membrana basilaris than between a stretched sheet and strings of a piano.

Dr. Boot and Dr. Wilson suggest that the sound waves entering the ear may pass up through the vestibule and thus bring about a stimulation of the hair-cells of the crista and account in this way for the origin of labyrinth tonus. It would seem that the close anatomic relation between the two parts of the labyrinth might suggest that the same impulses could stimulate the two sets of end organs. It would be interesting if experiments could be devised that might demonstrate this. He does not see that the observation pointed out by Dr. Boot, that a sharp sound startles a person, is necessarily a proof that this is the result of the increased labyrinth tonus.

Dr. Lewis suggests that extra-labyrinth tonus impulses are more important than the tonus from the labyrinth. It would seem a priori that the tonus impulses emanating from a mechanism that has been set aside for the purpose of supplying tonus would be more delicate and more important than the more primitive tonus impulses that emanate from other sources. He does not know of any way by which it is possible to determine whether the labyrinth or the extra-labyrinth tonus impulses are the more important.

Dr. Lewis asks whether he believes that the principal function in the semicircular canals is to give tonus?

Dr. Shambaugh is inclined to believe that the tonus function of the semicircular canals is as important as any function they may have.

Dr. Lewis thinks that the chief function of this whole apparatus is to sense motion, and that tonus is only a secondary function. He asked Dr. Shambaugh whether he does not believe that the extra-labyrinth tonus impulses disappear with loss of consciousness?

Dr. Shambaugh does not see any reason why all the extra-labyrinth tonus impulses must necessarily stop with loss of consciousness, especially if these extra-labyrinth tonus impulses have their origin in the action of the viscera, such as the pulsation of the heart and the act of respiration.

Dr. Lewis suggests that the nodding which occurs when one falls asleep in a chair is an evidence that the extra-labyrinth tonus disappears with loss of consciousness.

ENGLEWOOD BRANCH, CHICAGO MEDICAL SOCIETY

Regular Meeting, Englewood Branch, Chicago Medical Society, March 4, 1913.

The March meeting of the Englewood Branch was held on the evening of March 4 at the Englewood Hospital.

Dr. C. Hubart Lovewell gave the history of a most interesting case of severe persistent headache, vomiting, coma and death in ten hours. He entered on a brief, yet thorough, discussion of the case which he had diagnosed as one of acromegalia.

The report of the autopsy made by Prof. H. Gideon Wells of the Chicago University was most ably and entertainingly presented by Dr. F. K. Bartlett, also of the Chicago University. Dr. Bartlett brought out many instructive points. Specimens and slides were shown.

The work of Dr. G. J. Hagens in his presentation of obstetric demonstrations on the manikin was of the highest order, very instructive and appreciated by all. He covered the ground in a thorough manner. First taking up the normal pelvis, giving the anatomic points of interest to the obstetrician, the various pelvic diameters, etc. He showed various pelvices, normal and otherwise. Fetal head diameters were given and their relation to the birth canal discussed. Normal labor was most beautifully demonstrated. The various presentations—head, breech, transverse, brow, face and in fact every presentation to which the unborn child is heir were demonstrated. Likewise the various positions. In finishing his highly instructive and interesting work of the evening, Dr. Hagens gave a masterful demonstration of the application of forceps.

The meeting proved to be one of great interest, highly instructive and everyone felt that he had been amply repaid for coming. The attendance was fifty-two.

A. G. BOSLER, Secretary

EFFINGHAM COUNTY

The regular monthly meeting of the Effingham County Medical Society was held at the City Hall, Effingham, Feb. 11, 1913, at 1 o'clock with Dr. Taphorn in the chair.

Minutes of last meeting read and approved. A motion was made by Dr. Brooks that the board of censors act as a committee on resolutions. Carried.

Letter from Dr. Dorsett read and a motion made by Dr. Burkhardt that we call a special meeting on February 25 to hear Dr. Dorsett. Carried. Board of censors reported favorably on the application of Dr. Stein of Altamont and the doctor was duly elected a member of the Society. As the speakers on the program failed to appear a round-table talk on pneumonia was proposed. Very interesting remarks on treatment and method of handling cases were made by Drs. Burkhardt, Brooks, Bing and Taphorn. Dr. Burkhardt gave a short talk on some points of "Ethics."

A motion to instruct the secretary to communicate with the proper authorities about securing a man to work the field for new members was made by Dr. Brooks, seconded by Dr. Bing. Adjourned at 3:30 o'clock to meet again for call meeting February 25.

Meeting of Feb. 25, 1913

Meeting called to order by president. Dr. Dorsett of St. Louis, introduced by Dr. Taphorn, gave a very interesting stereopticon lecture on the repair of the perineum and the significance of hemorrhages from the genitals in women over 40 years old. There was a goodly attendance of the members. In the evening Dr. Dorsett gave an address to the citizens at the Court House.

Meeting of March 11, 1913

The meeting of the Effingham County Medical Society was called to order by the president, Dr. Taphorn. Minutes of the previous meetings read and appproved.

Business session called. Motion by Dr. Buckmaster that the resolutions committee draw up resolutions favoring a medical department of the University of Illinois. Motion carried.

Motion made that the board of censors act on the suggestion of the secretary and use their judgment in the matter of the list of non-members to be submitted to Mr. Franklin Young for solicitation. Motion carried.

Motion that it is the sense of this meeting that we discontinue the use of cards in papers except such papers, magazines, etc., as are recommended by the board of censors. Motion carried.

Motion on resolutions regarding state board presented by Dr. E. Buckmaster and referred to the resolutions committee.

Program: Dr. W. L. Heizer of Bowling Green, Ky., state registrar of vital statistics, was introduced by Dr. Burkhardt. Dr. Heizer gave a very interesting and instructive talk on results accomplished in Kentucky through careful reports of vital statistics and the cooperation of physicians and state officials. The lack of complete reports of births and deaths makes our records worse than none because they show a false ratio.

Dr. C. C. Holman read a paper on "Pneumonia and Pneumococcic Infections." This was a paper well worth listening to and showed a great deal of thought and time in preparation and research.

Dr. Diehl of St. Louis, formerly of this county, made a few remarks. Discussion was opened by Dr. Brooks on both paper and resolutions before the house. After a report by the censors favoring a vote by the society on resolutions presented, the vote was taken and resolutions adopted.

Meeting adjourned at 4 p. m.

Dr. Heizer gave a public lecture in the evening; subject, "More Life."

GREENE COUNTY

The regular meeting of the Greene County Medical Society was held at the City Council Room at White Hall, Friday, March 14, 1913. The meeting was called to order at 11 a. m. by the president, Dr. Howard Burns. Members present were: Drs. Howard Burns, J. W. Adams, James Squires, J. O. DeCourcy of Carrollton, H. W. Smith of Roodhouse, H. W. Chapman, G. W. Burns, F. N. McLaren, L. O. Frech and H. A. Chapin of White Hall.

The secretary reported that the constitution, by-laws and minutes were destroyed by fire in his office on February 16, and the report of the previous meeting, which was published in one of the local papers, was read and approved. None of the censors being present, the president appointed Drs. Chapman, Adams and Squires censors pro tem. Motion made by the secretary and carried that the president appoint a committee of one to draft a new constitution and by-laws for adoption at the next meeting, as the original had been destroyed. Dr. Chapman was appointed.

The applications of Drs. L. O. Hamilton, J. O. Cravens and H. W. Garrison for reinstatement were read and on motion of Dr. Chapman they were ordered reinstated. The applications of Dr. J. O. DeCourcy of Carrollton, Dr. C. C. Wood of Rockbridge, and Dr. H. C. Campbell of White Hall for membership were read and reported to the board of censors. The secretary reported favorably upon the applicants, and on motion of Dr. H. W. Chapman the secretary was ordered to cast the ballot for Drs. Wood, DeCourcy and Campbell as members.

On motion of Dr. Squires, Dr. Chapin was elected delegate and Dr. Howard Burns alternate delegate to the state meeting to be held in Peoria, May 20-22, 1913.

The secretary reported the death of Dr. E. K. Shirley, a member of the Society, and moved that a committee be appointed to draft resolutions expressing sympathy. President appointed Drs. H. W. Chapman, L. O. Frech and H. A. Chapin as said committee.

The secretary stated that the question of establishing medical defense, which includes all the features of the medical defense associations, had been raised by Dr. Moyer at the last meeting of the State Society, and suggested that the same be discussed by each county society before the next meeting of the State Society and instruct their delegate in regard to what action he should take. Motion made by Dr. Chapman and carried that the delegate be instructed to use his influence to secure the medical defense organization in connection with the State Society. Meeting adjourned for dinner.

Called to order at 2:30 p. m. Dr. Howard Burns read a very interesting and instructive paper on "Therapeutics of Iodin," which was discussed by all present. Censors reported that the next meeting would be held at the Belltown Spring, June 13, 1913. Same to be a picnic to which the physicians and their families were invited.

The following resolutions were presented and adopted:

WHEREAS, Dr. E. K. Shirley, a member of the Greene County Medical Society, has been suddenly taken from our midst by death; and

WHEREAS, The Greene County Medical Society greatly feels the loss of Dr. Shirley's association and fellowship with the members of this Society; therefore be it

Resolved, That we hereby wish to express our sympathy to the various members of his family; and be it further

Resolved, That a copy of these resolutions be spread on the minutes of this Society and a copy of the same be sent to the family of the deceased, and also that one be sent to the ILLINOIS MEDICAL JOURNAL for publication.

Signed: H. W. CHAPMAN.
L. O. FRECH.
H. A. CHAPIN.
Committee.

There being no further business the Society adjourned.

H. A. CHAPIN, Secretary.

MADISON COUNTY

Regular Meeting, Feb. 7, 1913

The Madison County Medical Society held its regular monthly meeting at Edwardsville, February 7. This was one of the best meetings ever held. Dr. Carl E. Black of Jacksonville, who was expected to read a paper was unavoidably detained and in his absence Dr. R. W. Mills of St. Louis was secured. He delivered a lecture on the "Stomach," illustrated by *x*-ray pictures showing normal and abnormal conditions of that very valuable organ. Also showing ulcers, cancers, constrictions, hourglass stomach, etc. The talk and exhibit were a revelation to his hearers and had a tendency to entirely revolutionize many of our former conceptions of the positions and size of this part of the alimentary tract. Dr. Mills' address was a very instructive and interesting one and he was given a vote of thanks for coming to us at a moment's notice and also for his very acceptable efforts. He was also cordially invited to visit us again on some future occasion.

Five new members were received in this society: Dr. Edward N. Hagin, Granite City; Dr. Wm. H. Enos, Alton; Dr. Thomas C. Smith, Wood River; Dr. Wm. E. Range, Glen Carbon, and Dr. Theo. F. Reusch of Collinsville.

The secretary was instructed to convey the thanks of the Society to Dr. W. E. Fischel of St. Louis for his lecture recently delivered in Alton on the subject of "Cancer" under the auspices of the Society. As many of the speakers invited to address us use illustrations in connection with their papers, the Society thought it advisable to purchase a stereopticon, and Drs. Ferguson and Fiegenbaum were appointed a committee to ascertain the cost of a machine and report at our next meeting. A committee consisting of Drs. Luster, Burroughs and Spitze was appointed to confer with a committee of the St. Clair County Medical Society to arrange for a joint meeting of the two societies at a convenient point. Dr. J. B. Hastings reported that the officers of this society had been elected as the officers of the Madison County Anti-Tuberculosis Society. Dr. E. W. Fiegenbaum suggested that Dr. F. E. Tulley of Granite City act as secretary of the Anti-Tuberculosis Society, and Dr. Tulley was duly elected to that position. The matter of the extension of the benefits of the medical defense fund was introduced by a letter from Dr. Moyer and the subject was fairly well discussed and the whole subject was referred to a committee consisting of Drs. Burroughs, Smith and Luster who will investigate and report at our next meeting, when our delegate will be instructed how to vote on the proposition. This is a matter of vital interest to every member and your wishes in this regard ought to be on record before we vote.

Present: Drs. Hastings, Zoller, Pfeiffenberger, Burroughs, Cook, Smith, Luster, Sharp, Oliver, Vogt, Hirsch, Ferguson, Barnsback, Sutter, Wahl, Robinson, Sims and E. W. Fiegenbaum.

Regular Meeting, March 7, 1913

The Madison County Medical Society met in Granite City March 7, and quite a number of the regular attendants were present, but the great majority of our members were conspicuous by their absence. The committee on medicolegal defense reported a recommendation that instead of an assessment of $10.00 per member for this purpose, the amount be fixed at $2.00 per member per year for five years. The delegate was instructed to assist in carrying out this plan, but failing in this, to vote for any measure by which the benefit of the defense fund would be extended. Dr. Charles H. Neilson of St. Louis, Professor of the Theory and Practice of Medicine of St. Louis University, gave us a very instructive address on the "Treatment of Hyperacidity." The doctor is a very fluent and impressive speaker and seemed to be loaded with a vast amount of very valuable information on this subject, and his lecture was much appreciated by the members present. The next meeting will be held in the Renfro Hotel, Collinsville, on April 3, in conjunction with the St. Clair County Medical Society.

MONTGOMERY COUNTY

The Montgomery County Medical Society met in regular session on the afternoon of January 21, at St. Francis Hospital, Litchfield, with the following in attendance: Drs. P. M. Kelly, G. A. Clotfelter, L. S. Brown, Z. V. Kimball, C. H. Lockhart, I. O. Wilcox, J. D. Colt, L. G. Allen, F. C. Blackwelder, M. W. Snell, H. F. Bennett, G. A. Sihler, Sr., and G. A. Sihler, Jr. Drs. G. L. Armstrong and S. B. Herdman of Taylorville were guests of the Society.

Dr. Lewis Wine Bremerman of Chicago was the guest of honor at this occasion. He devoted the afternoon to a most instructive genito-urinary clinic. The diagnostic value of cystoscopy and ureteral catheterization was impressively demonstrated in two cases. A suprapubic prostatectomy, which was brilliantly executed, concluded the afternoon's work. This patient made an uneventful recovery and left the hospital on the fourteenth day.

MORGAN COUNTY

Saturday, March 8, Dr. Ludwig Hektoen of Chicago presented the subject "Milk Epidemics," or the relation of impure milk to disease, to a good sized audience at the High School Auditorium, Jacksonville.

Dr. Hektoen showed clearly the relation of epidemics of scarlet and typhoid fever, diphtheria and septic sore throat to the milk-supply, which was the carrier of these respective infections. Dr. Hektoen advocated proper pasteurization of milk by the "holding process," that is 149 degrees for twenty minutes, as well as general cleanliness in gathering, proper cooling and proper distributing of milk to consumers.

The lecture was well received and is acting as an educational factor which will we hope ultimately help in getting a good milk-supply for Jacksonville. Preceding the lecture an informal dinner was given at the Peacock Inn at which were a number of members of the Medical Society and the educational committee of the Woman's Club, under the auspices of which two societies Dr. Hektoen gave his lecture.

On March 13 occurred the regular meeting of the Society. A preliminary report of the milk committee was considered. The source of the milk-supply is from numerous small dairies and one creamery company which pasteurizes its product. The state law and city ordinances were read and seemed to be powerful enough. The small salary of the city health physician, twenty-five dollars per month, does not seem a proper incentive to much activity along public health lines. The committee's work will be continued until results are produced.

Drs. M. F. Woods, Waverly; J. K. Elder and J. H. Spencer, Murrayville, and Emanuel Sipes, Jacksonville, were elected to membership.

GEORGE STACY, M.D., Secretary.

STEPHENSON COUNTY

The members of the Stephenson County Medical Society met February 21 at lunch at the Freeport Club. The meeting was attended by members residing in the city; the president, Dr. Charles L. Best, presided.

A committee was appointed consisting of Drs. Stealy, Rideout and Snyder, whose duty it is to submit amendments to the present constitution of the society looking toward the establishment of a Freeport section of the county organization. It is hoped to have more frequent meetings of the doctors and that these meetings be held monthly. It is proposed to have these affairs of a social as well as a literary nature.

The following committees were announced: Program Committee, Drs. J. S. Clark, W. T. Collins, I. G. Voight. Judiciary Committee, Drs. D. C. L. Mease, N. C. Phillips, K. F. Snyder. Library Committee, Drs. J. H. Stealy, A. E. Smith, Mary L. Rosensteil. Bulletin Committee, Drs. W. L. Karcher, C. J. Leavy,

Sarah E. Hewetson. Committee on Red Cross Medical Work, Drs. Charles L. Best, J. Sheldon Clark, J. H. Stealy, Robert J. Burns, James A. Poling.

A letter was read which had been received from the Committee on Red Cross Medical Work of the American Medical Association, in which the county medical society was asked to cooperate with the American Red Cross in the matter of medical work.

VERMILION COUNTY

The February meeting of this Society was a great meeting. Dr. Jacob C. Fisher read an excellent paper on "Serological Diagnosis and Therapy of Tuberculosis." Dr. Robert Clements opened the discussion with an interesting paper and talk on the diagnosis phase.

Dr. F. A. Baumgart followed with an able paper and talk on "Serum Therapy of Tuberculosis."

The men who presented the program came boldly out in their assertions, which showed they were familiar with the subject in hand. They made it a valuable evening for those present. Drs. McCaughey, E. G. C. Williams and Cooley gave very interesting talks. Drs. McCaughey and Williams agreed with the authors, but Dr. Cooley declared the use of serums in fighting tuberculosis "is like shearing a pig—there is more squeal than wool."

Dr. Dale reported the progress made by the Fee Bill Committee. The committee decided that it is impractical to establish an uniform fee bill for the whole county. Owing to custom, the fees are higher in Danville since it is more expensive to maintain offices and living expenses, bad bills, etc., with which the Danville physicians must contend.

The rural physicians thought their services were worth just as much to the patients as the city physician's—this nobody doubts, but while the fees they have been in the habit of charging were so much lower they thought it unwise to raise theirs to the raised bill of the city physician. Consequently it was decided to advise the president of the county society of this dilemma. The president then appointed three additional physicians of Danville to confer with Drs. Glidden, Dale and Joseph Fairhall. These men were Drs. Barton, Reagan and Baumgart.

The fee bills drafted by the two divisions of committees are to be presented to the county society for its approval or disapproval. Dr. Dale acted as their secretary.

WINNEBAGO COUNTY

The Winnebago County Medical Society met at the Nelson Hotel, Rockford, March 11, 1913, with Dr. Lofgren in the chair. The minutes of the previous meeting were read and approved.

The following doctors were admitted to the Society as members: Harry Parker, Pecatonica; Sikes, Roscoe; O. A. Olson, Rockford; F. Weld, Rockford.

Program: Dr. E. Weld read a paper on the "Significance of Blood Findings." Dr. R. C. Bourland spoke briefly on "Clinical Features of Acute Pleurisy and Acute Empyema." General discussion followed both talks. The preparation and dispensing of certified milk in Rockford was next discussed. The Society wished it understood that it favored the use of certified milk, and that it looked with favor to any party or parties wishing to manufacture and dispense the same.

The next meeting will be held the second Tuesday in April, and at that time Dr. Fischkin of Chicago will address the Society on "Syphilis." Following this a banquet will be held at the Nelson Hotel.

In answer to a letter from Dr. Harold Moyer of Chicago, on medical defense, the Society looked with favor to this new movement.

NEWS OF THE STATE

NEWS ITEMS

—The Board of Supervisors of Champaign County have decided to have a tuberculosis hospital constructed at the county farm.

—Dr. H. E. Ronald of Mattoon, charged with performing a criminal abortion, has secured postponement of hearing of his case until the September term of court.

—The Woman's Home Missionary Society of the Methodist Church will open a hospital in Litchfield in the near future. It will be known as the Holder Memorial Hospital.

—Dr. Wm. E. Quine of Chicago will speak to the members of the Decatur Medical Society at its annual banquet, April 15, on "Work of the Physician in Connection with that of the Surgeon."

—Charles A. Sedlack, charged with deserting, for a nurse, the wife who had aided him financially in getting through medical college, was recently sued for separate maintenance in the Cook County court.

—One Dr. W. A. Gray has been working in the region of Princeton, exploiting a goiter cure. The Princeton *Tribune* prints an article from the Walnut *Mail*, expressing indications that fraudulent methods were used by this man.

—Algonquin, a village of 500 inhabitants in McHenry County, was thrown into great excitement recently by the sudden appearance of forty-nine cases of scarlet fever among the school children. Fortunately, the epidemic was mild.

—Dr. Everett Mayos, formerly connected with the state hospital at South Bartonville, and later of Arizona, Joliet and Chicago, has been sued for divorce by his wife, who was formerly a nurse at the Bartonville Hospital, on the grounds of extreme cruelty.

—Dr. J. E. White of Freeport, has sued the Burlington Railroad for $10,000 damages for being put off the train at Milledgeville instead of Chadwick, and requiring him to hire a conveyance and ride fourteen miles across heavy country roads where he had been summoned to perform an operation.

—S. C. Brown, traveling under the assumed name of "Dr." G. W. Davis, of the fictitious emergency hospital of Peoria, was recently arrested in Galesburg for obtaining money under false pretenses. It is stated that many people in McDonough County had given this man considerable money for "curing" eye diseases.

—A Chicago doctor, giving the name of E. C. Martin, victimized a number of farmers in the vicinity of Harvard during a canvass of rural sections, by prescribing remedies that would cure all possible ailments. One well known Dunham farmer was called on to pay a note for $127

for the remedies left with him. At the time the farmer signed what he supposed was a contract in which it was stipulated that a sure cure was included, but which later turned up as a promisory note. Some six or seven farmers in that vicinity were taken in in like manner.

—Dr. A. J. Clay of Hoopeston, aspires to become a member of the State Board of Health. We will be pleased to see Dr. Clay appointed to that place. In connection with this the following endorsement was unanimously agreed on by the Vermilion County Medical Society:

"To Governor Edward F. Dunne, State of Illinois.—We, the Vermilion County Medical Society, constituting a membership of ninety-two, do hereby unanimously endorse our member, Dr. A. J. Clay of Hoopeston, as being an ethical and upright physician, and fully capable of filling the position he is seeking as a member of the Illinois State Board of Health."

—Rev. Polk Goodson, at Springfield, in a sermon preached Sunday, March 16, uttered the following language regarding the medical profession: "I question if any man is more loyal to our physicians than I; they are the country's saviours; but there has crept into the profession, while the ethical physician has been healing his patients, a great crowd of incompetent and unscrupulous men, who have hidden their crime under the cloak of their profession. They starve, they rob, they kill, the widow, the orphan, the ignorant—they are common vultures, and society ought to be rid of them now, and society will rid itself of them. The next investigation will be with the doctors; the ethical doctors will welcome it, and society will be relieved of a human octopus." His language regarding the unethical lawyer was no less startling.

PERSONALS

Dr. J. C. Fults of Waterloo, has been appointed County Physician of Monroe County.

Dr. Herman Milbacher of Aurora, while running to catch a car, fell and injured his side.

Dr. E. O. Woods of Chicago has removed to Freeport, where he will be employed by Dr. K. F. Snyder.

Dr. J. E. Snyder of Chicago has removed to Moline, where he will open up offices in the Kerns Building.

Dr. J. Wilbur Moreland, lately of Penfield, has removed to Maxbass, N. D., where he expects to continue medical work.

Dr. Julius Gruenewald has removed from Worden to St. Louis, which leaves Dr. C. E. Dorr the only physician in Worden.

Dr. G. W. Bradley of Waverly desires us to announce that he was not placed in jail as stated in the January issue of the JOURNAL.

Dr. C. U. Collins, after a very successful year as president of the Peoria Association of Commerce, has retired from that office.

Dr. John Bartlett of Galesburg, who has been in a Chicago Hospital for some time past as the result of a serious illness, has recovered.

Dr. Frederick Sidley of Peoria is lying at St. Francis Hospital suffering from painful injuries received in a fall from a street car recently.

Dr. John Colwell who has held the position of assistant warden and head intern at the Cook County Hospital, Chicago, has located at Foosland.

Dr. J. C. Dallenbach is recorded a member of the Champaign County Medical Society by transfer from the King County Medical Society, Washington.

Dr. J. L. Hawkins has sold his practice in Watseka to Dr. H. W. Clifton of Lacon, and will remove to Chicago, where he formerly practiced. Dr. Clifton was formerly connected with the Marietta Phelps Hospital at Macomb.

Dr. George F. Butler of Wilmette has left the office of County Physician of Cook County, abandoned "rampaging Peter" Bartzen to his fate, and removed to Kramer, Ind., where he becomes medical director of the Mudlavia Sanitarium. Any disease entity that refuses to yield to Butler's therapeutics, Kramer's cascarets and Indiana mud should be ashamed of itself.

Drs. William T. Easley and J. C. Wilson of Greenville, recently celebrated the thirtieth anniversary of their graduation from the College of Physicians and Surgeons, St. Louis, by a banquet at the residence of Dr. Easley. These gentlemen have ever since their graduation been neighbors and friends, and time only serves to strengthen the friendly feeling existing between them.

The following physicians went on the Panama excursion: Dr. and Mrs. Archer O'Reilly, St. Louis; Dr. and Mrs. E. P. Raab, Belleville; Dr. and Mrs. Everett J. Brown, Decatur; Dr. and Mrs. H. G. Mudd, St. Louis; Dr. and Mrs. H. H. Roberts, Maywood; Dr. and Mrs. F. W. Werner, Joliet; Dr. and Mrs. S. M. Peairs, Joliet; Dr. and Mrs. C. F. Klaus, Chicago; Dr. and Mrs. C. C. Eldred, Joliet; Dr. F. J. Kolar, Chicago; Dr. E. B. Packer, Toulon; Dr. M. B. Clopton, St. Louis.

REMOVALS

Dr. J. N. Shearl from Urbana to Middletown.

Dr. F. M. Copple of Havana has removed to Paris, Cal.

Dr. Nels Hanson of Rockford has removed to Moline.

Dr. J. G. Lamb has removed from Fisher to Cerro Gordo.

Dr. P. S. Waters has removed from Brookport to Anna, Ill.

Dr. G. W. Poole has removed from Danville to Peoples Gas Building. Chicago.

Dr. H. A. Gerbig of 1750 Madison Street, Chicago, has removed to Friend, Neb.

Dr. E. W. Mosley, 1625 Western Avenue, Chicago, has removed to Lincoln, Neb.

NEW INCORPORATIONS

Marion Hospital Company, Marion, $20,000; maintain a hospital. Incorporators, D. D. Hartwell, M.D., L. L. Fowler, M.D. and A. M. Edwards, M.D.

Chicago College of Chiropody and Pedic Surgery, Chicago, $2,500; educational. Incorporators, Agnes C. Enlow, H. R. Enlow and N. Von Schill.

PUBLIC HEALTH

—The Litchfield Woman's Club have employed a visiting nurse to devote her entire time to the poor.

—Dr. G. T. Palmer of Springfield delivered an address on public health matters at Litchfield, Ill., February 6, under the auspices of the Litchfield Woman's Club.

—Dr. Richard Dewey of the Milwaukee Sanitarium, Wauwatosa, Wis., has secured the services of Dr. Herbert W. Powers as senior assistant physician. Dr. Dewey continues to reside at the sanitarium and in active personal charge of the medical service. Dr. Powers comes from seven years successful service at the Kenilworth Sanitarium.

—A new law has been passed in Colorado calling for state-wide notification of tuberculosis. Prominent social workers in Illinois have wired to Governor E. M. Ammons on his having signed the bill, which he did in the face of those who opposed the steps of progress in the health campaign. It is believed by these social workers that this movement in Colorado will help the cause of health throughout the country and that such laws are absolutely essential if tuberculosis is to be eradicated.

—An English-speaking Conference on the Prevention of Infant Mortality will be held in Caxton Hall, Westminster, London, on Monday morning, Monday afternoon and Tuesday morning, August 4 and 5. The meetings will be held under the auspices of the (British) National Association for the Prevention of Infant Mortality and The Welfare of Infancy under the Patronage of the King and Queen, and will convene immediately preceding the opening of the International Medical Congress.

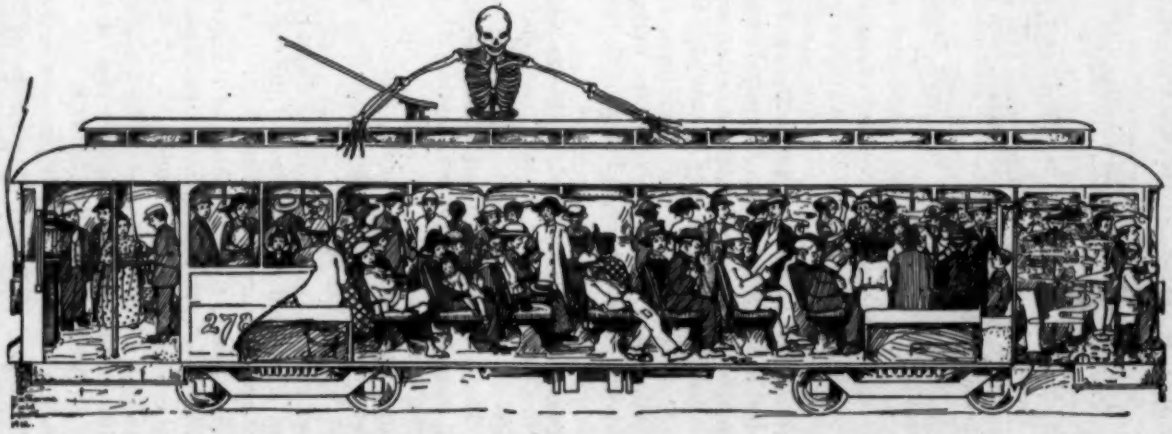
A tentative program has been issued by the committee, which indicates that the papers will consist largely of medical opinion. The subjects treated will be: "The Responsibility of Central and Local Authorities in Infant and Child Hygiene," "The Administrative Control of the Milk Supply," "The Necessity for Special Education in Infant Hygiene," "Medical Problems in Infant Nutrition" and "Ante-Natal Hygiene."

The President of the Conference will be the Hon. John Burns, M.P., President for the Local Government Board. The Chairman of the English Executive Committee is Sir Thomas Barlow, and the Secretary, Miss J. Halford, 4 Tavistock Square, London, W. C.

The American Committee, in charge of the part to be taken by the United States and Canada, will furnish information to those desiring to attend the conference. Dr. Henry L. Coit, Chairman, 277 Mt. Prospect Avenue, Newark, N. J. Dr. Philip Van Ingen, Secretary, 125 East 71st Street, New York City.

EN ROUTE – TO ILL HEALTH

THE UNVENTILATED, OVERCROWDED STREET CAR IS A POSITIVE MENACE TO HEALTH



A box full of steaming, sneezing, spitting, sputtering, coughing human beings, each breathing in the other's foul exhalations. . . . Such is the ordinary city street car during "rush hours."

Many a morning's ambition, born of the freshness of the waking hour, has been stifled by the foulness of the morning's ride.

Chicago Health Department, Educational Poster No. 131 **Designed by Dr. C. St. Clair Drake**

From Bulletin Chicago Department of Health.

MARRIAGES

V. C. MORTON, M.D., of Rantoul, to Miss Mae Oakman of Peoria, at Chicago, March 5.

JOHN PETERS, M.D., of Maywood, to Miss Lillian Goldberg of Chicago, February 18.

DARWIN KIRBY, M.D., of Champaign, to Mrs. Julia Wilson of Chicago, at Chicago, March 1.

E. T. TEHULKA, M.D., and Miss Denna Pearson, both of Glasford, were married at Peoria, March 19.

F. M. BLOME, M.D., of Roberts, Ill., to Miss Della Rueger of Carson City, Mich., occurred at that place February 12.

DEATHS

GEORGE B. SMITH, M.D., Kansas City (Mo.) Medical College, 1880, of Brussells, Ill., died in Los Angeles, Cal., February 7; aged 60.

AMOS CLYDE STALEY (license Illinois, 1897), an experimental chemist of Chicago, died suddenly in his laboratory in that city, February 18; aged 43.

GEORGE MARK SILVERBERG, M.D., New York City, 1893; formerly of Chicago; died at his home in Los Angeles, February 22, from heart disease; aged 52.

KATE B. PETERSON, M.D., Bennett Medical College, Chicago, 1885; died at her home in Chicago, January 20, from sepsis, due to phlegmon of the leg; aged 76.

JOSEPH M. DE TRANA, M.D., Rush Medical College, 1892; of Chicago, died in the Presbyterian Hospital in that city, February 11, from hemorrhage into the pons; aged 46.

WILLIAM ADAIR JONES, M.D., died at his home in Bloomington, Feb. 28, 1913, after a lingering illness with liver trouble. The deceased was born in Union, W. Va., Aug. 8, 1843.

EDGAR W. SMALLWOOD, M.D., Jenner Medical College, Chicago, 1910; for eight years one of the staff photographers of the *Daily News*, died at his home in Chicago, February 18; aged 40.

ROBERT CHRISTIE GIBSON, M.D., University of Pennsylvania, Philadelphia, 1876; formerly of Pittsburgh, died at his home in Chicago, February 14, from cerebral hemorrhage; aged 65.

CURTIS T. FENN, M.D., Rush Medical College, Chicago, 1866; a member of the Illinois State Medical Society; died at his home in Chicago, February 21, from senile debility; aged 79.

FRANK C. MOLKUP, M.D., Chicago Homeopathic College, 1898; Hahnemann Medical College, Chicago, 1905; a member of the Bohemian Medical Society of Chicago; died suddenly from heart disease at his home in Chicago, March 1; aged 42.

ALBERT P. KADISON, M.D., University of Munich, Bavaria, 1874; is said to have been the first Jewish physician in Chicago; known as "the little father of the Ghetto," active in Jewish social work; died at his home in Chicago, February 26; aged 78.

GEORGE W. TAYLOR, M.D., Syracuse Medical College, Eclectic, Rochester, N. Y., 1853; one of the oldest practitioners of Princeton, Ill.; for many years a minister of the Christian Church; died at his home January 26, from senile debility; aged 97.

JOHN HEADLAND, M.D., Physio-Medical College of Indiana, Indianapolis, 1886; a member of the American Medical Association; at one time mayor of Galva, Ill.; died at the Peoria Sulphur Springs Sanitarium, February 12, from heart disease; aged 50.

JAMES ALAN NEVILLE, M.D., George Washington University, Washington, D. C., 1910; formerly an interne at the United States Marine Hospital, Chicago; superintendent of the Iroquois Memorial Hospital, Chicago; died in that institution, February 20, from pneumonia; aged 28.

FREDERICK CHARLES EGGERT, M.D., Northwestern University, Chicago, 1898; instructor in operative surgery in his alma mater; a member of the American Medical Association; chief surgeon of the German Deaconess Hospital; died at his home in Chicago, March 6, from pneumonia; aged 37.

J. B. SHAWGO, M.D., Bennett Medical College, Chicago, 1877; of Quincy, Ill.; a member of the Illinois State Medical Society; a veteran of the Civil War; for four years an alderman of Quincy, and President of the Board of Directors of the Public Library, and for twenty years Chairman of the Board of Commissioners of the House of Correction; died in a hospital in Jacksonville, February 19; aged 69.

JOHN W. DAL, M.D., Northwestern University Medical School, Chicago, 1878; a member of the American Medical Association and Chicago Medico-Legal Society; for many years an esteemed practitioner of northwest Chicago; aged 58; died at his summer home in West Olive, Mich., February 14, from carcinoma of the tongue and throat, for which operation had been performed a year ago at Wesley Hospital.

Book Notices

DISEASES OF THE HEART AND AORTA. By Arthur Douglass Hirschfelder, M.D., Associate in Medicine Johns Hopkins University. Second edition. J. B. Lippincott Co., Philadelphia and London. Price $6.00.

This is the second edition of this excellent treatise in less than three years, and the practitioner who has not kept in touch with the remarkable development of the literature on the diseases of the heart and aorta will be greatly surprised to find what a remarkable mass of material has been put inside the covers of

this book of more than 700 pages. It brings the subject down to date in every detail, including the later forms of the electrocardiogram and all that is known of blood-pressure, the outlining of the heart and vessels by means of the *x*-ray, and the phonographic recording of heart sounds.

Every practitioner of general medicine should have this book on his shelf and become familiar with its contents.

MUSCLE TRAINING IN THE TREATMENT OF INFANTILE PARALYSIS. By Wilhelmine G. Wright, Boston Normal School of Gymnastics, 1905. Reprinted from The *Boston Medical and Surgical Journal*, Vol. clxvii, No. 17, pp. 567-574, Oct. 24, 1912. Price Twenty-five cents. W. M. Leonard, Publisher, 101 Tremont St., Boston, Mass.

The demand for light on this subject exhausted the file of the *Journal* in which it was printed and has led Dr. R. W. Lovett and the Medical *Journal* to re-issue the article in form of a thirty-two page reprint at the nominal price of twenty-five cents. The directions given are explicit and make the reprint not only of great value, but practically the only set of definite directions in the treatment by exercise of conditions following paralysis.

NEW AND NONOFFICIAL REMEDIES.—1913.

The Council on Pharmacy and Chemistry of the American Medical Association have just issued a revised edition of this valuable work, which brings it to the practitioner down to date, and which should find a place on the desk of every active practitioner whether physician or surgeon. The price is reasonable and besides the profession is entitled to the supplement which will be sent out from time to time. Only those who have kept in touch with the publicatons of the council will appreciate the great work which is done right along by the National Association.

THE SURGICAL CLINICS OF DR. J. B. MURPHY OF MERCY HOSPITAL. Volume 2, No. 1, February, 1913.

This number is the first in the second volume of Dr. Murphy's Clinics, and is particularly valuable because of the thirty-two pages devoted to remarks of Mr. W. A. Lane of London on the open treatment of fractures, which is beautifully illustrated by *x*-ray photographs from his own and Dr. Murphy's collection.

Dr. W. C. Woodward, health officer of the District of Columbia, is introduced also to speak on the medicolegal relations of the physician and patient. There is also the usual number of valuable articles contributed by Dr. Murphy himself, which have served to make these publications so popular. Messrs. Saunders and Company inform us that they expect to continue the publication of these clinics indefinitely.

SOLIDIFIED CARBON DIOXID. By Ralph Bernstein, Clinical Instructor in Skin Diseases, Hahnemann Medical College, Philadelphia. Frank S. Betz Co., Publishers. Price $1.00.

The Frank S. Betz Company, surgical instrument dealers of Hammond, Ind., and Chicago, Ill., have published this highly instructive work, which is a complete amplification of remarkable therapeutic advice first introduced by Dr. Pusey of Chicago. The subject is considered in the seven chapters covering a description of each method of preparation and application, and finally the therapeutics which embraces the treatment of nearly fifty different forms of disease.

We are confident this treatment is not sufficiently known, and believe that Dr. Bernstein's work will meet with a hearty reception.